

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXXIV.

NEW YORK, SATURDAY, MAY 20, 1899.

No. 20.

ORIGINAL ARTICLES.

SYPHILIS OF THE EYE AND ITS APPENDAGES.¹

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It is not possible, in the brief time allotted to this paper, to give any detailed account of the various syphilitic affections of the eye and its appendages. It has, therefore, been deemed wiser to refer very briefly to the rarer lesions of a syphilitic nature met with here, and to devote most of the paper to an account of the commoner syphilitic affections which are likely to be encountered by the general practitioner. To this end I shall begin with the anterior or superficial lesions; those which are recognizable by the naked eye without the aid of any instrument of precision.

Syphilis of the Eyelids.—In the eyelids we meet with four varieties of syphilitic lesions: (1) The chancre; (2) papules or tubercles, the so-called tubercular syphilide; (3) rupial ulcerations; (4) gummatæ. These all occur in both lids, more frequently the lower lid, and at both canthi; and usually involve the edge of the lid.

The chancre may occur on the edge of the lid, involving both skin and conjunctiva, though it is sometimes met with on the skin surface alone, or on the conjunctival surface alone, or very rarely on the conjunctiva of the eyeball. It probably originates by inoculation of the virus in the mouths of the excretory ducts of the glands of the skin or mucous membrane. It begins as a small pimple with much itching and irritation. Then the summit becomes excoriated, the ulcer grows broader, but rarely deeper, and assumes a saucer shape. The edges are firmly indurated, and the floor is moist and covered with grayish-yellow débris. The base is distinctly indurated for some distance beyond the ulceration, and the lid may be much swollen. Induration of the neighboring glands is an almost constant symptom.

The two principal modes of contagion are unclean fingers, and the diseased mouth, lips, and tongue.

Diagnosis.—The resemblance of a chancre to a broken-down or ulcerated tubercular syphilide is often misleading. The latter has not the characteris-

tic induration, and its edges are sharply punched out. A hordeolum has an acute course, is painful, its base is not indurated, and it heals rapidly after being opened. A chalazion has a narrow, deep opening, with soft edges, and no induration. Rodent ulcer and epithelioma have some points of resemblance to a chancre of the edge of the lid, but they occur, as a rule, late in life, have a red, granular surface, and the ulcer tends to spread along the lid, healing as it extends. Lupus may be confounded with a chancre, but is rarely confined to this site, and may be discovered elsewhere on cutaneous and mucous surfaces. Chancre of the lid is chronic and indolent, and is not very responsive to treatment. The induration is persistent and may remain for months after the ulcer has healed. It rarely leads to any serious loss of substance or distortion of the lid. Local treatment is of little or no avail.

Syphilitic eruptions of the eyelids are usually of the papular or tubercular variety. They are quite common on the skin surface, but are rarely met with on the conjunctival surface. They may occur at any age, and at almost any period of the constitutional infection. They may be confined to the skin, or may involve the entire thickness of the lid. They often ulcerate, the center of a papule or tubercle breaking down or sloughing. The papule may be of rapid growth and great size, but it does not extend deeply, and the destructive process is superficial. A tubercular syphilide extends more deeply and, in some cases, presents the appearance of a diffuse gumma. Microscopically, the two are one. The resulting ulcer is a deep, punched out cavity with mucous edges, irregularly crescentic in shape, and covered with a brownish-red deposit or crust. The tubercular syphilide originates in the corium or subcutaneous cellular tissue, and is painful on pressure. It may cause deep destruction and distortion of the lid. When healed the cicatrix has a central depression and peripheral pigmentation. It may be confounded with lupus, but the latter extends slowly, the nodules are softer and rarely suppurate, and the cicatrix is diffuse and white. From epithelioma it must be distinguished mainly by the results of constitutional treatment.

Gummata, when confined to the skin or edge of the lids, are not common. They are characterized by a dense, board-like hardness, and the skin becomes of a reddish-brown color. When nodular and

¹Read before the New York Academy of Medicine, March 16, 1899.

isolated, they are one and the same with a tubercular syphilitide. When diffuse, the whole lid is swollen. The process may be either acute or chronic, and usually other symptoms of syphilis are present. When the whole tarsus seems to be infiltrated, it has received the name of tarsitis syphilitica. The infiltration is chronic and indolent and is generally located in the upper lid. There is no pain and no secretion. The tumor is hard and resisting, the lid cannot be everted, and ptosis is present. The swelling is homogeneous, and the skin is not usually involved. The cure is never a complete one, for after the absorption of this dense infiltration, more or less deformity of the tarsus remains, and it has entirely lost its normal resistance.

Syphilis of the Conjunctiva. — Syphilitic lesions occurring primarily in the conjunctiva are not common, especially in the cul-de-sac or ocular conjunctiva.

Conjunctivitis. — In syphilitic patients we not infrequently meet with an obstinate conjunctival inflammation, with little or no secretion, which does not yield to the ordinary local applications, but does to appropriate constitutional treatment. It is very apt to accompany cases of obstinate syphilitic iritis.

Chancre. — The chancre of the conjunctiva, not involving the eyelid, is a very rare lesion. It has been met with in the cul-de-sac, where the palpebral conjunctiva is reflected over upon the eyeball; and also in the ocular conjunctiva near the corneal margin, and in the lacrimal caruncle.

Syphilitic Eruptions. — Papules or pustules of the conjunctiva appear as small, circumscribed, elevated, non-vascular spots of a reddish-gray or coppery color. They may appear singly, or several may develop close together and subsequently coalesce.

Mucous patches on the conjunctiva closely resemble mucous patches met with on other mucous membranes. They may ulcerate, and then appear as shallow, irregular sores, with a tawny surface and ill-defined base. They respond readily to treatment, and cause but little contraction of tissue. When the papules or pustules ulcerate they have a fatty-looking coating, irregularly eroded edges, and uneven base. They usually cicatrize rapidly, and if on the edge of the lid, the cicatrix appears as a tendinous white cord. The isolated occurrence of these superficial ulcers of the conjunctiva has been regarded as symptomatic of constitutional syphilis.

Gummata. — True gumma of the conjunctiva is the least common of all syphilitic lesions of the eye, and is always a late manifestation of the disease. It may be either circumscribed or diffuse. It appears as a small, discrete nodule in the conjunctiva, varying much in size, with a yellowish summit and a red base. It

tends to disintegrate and ulcerate rapidly. If these gummata appear in the ocular conjunctiva, they may coalesce and form a zone of dense infiltration around the cornea, interfere with its nutrition, and cause ulceration or abscess.

Congenital Syphilis. — The poison of inherited syphilis does not seem to have any marked tendency to manifest itself either in the conjunctiva or eyelids, though patches of excoriation and actual loss of substance are occasionally met with in connection with similar manifestations on the face and scalp. The skin of the lids in syphilitic infants is usually thick and opaque, and the ciliary margins of the lids often show little pits and scars, the signs of former eruptions. We sometimes meet with well-marked instances of blepharo-adenitis of syphilitic origin, with patches of excoriation with sharply defined edges, and of irregular shape, near the canthi. The whole edge of the lid is then apt to be inflamed and swollen. No mucous patches or gummata are ever met with in these syphilitic children.

Syphilis of the Lacrimal Apparatus. — Constitutional syphilis rarely attacks the lacrimal apparatus primarily. The most frequent source of secondary affections of these organs is orbital periostitis, or periostitis of the nasal duct. Inflammation and ulceration of the nasal mucous membrane extends by contiguity of tissue to the lining of the nasal duct and thence to the lacrimal sac. Then follow more serious lesions of the nasal duct with the group of symptoms so familiar to all, of purulent discharge from the sac, stricture of the duct, phlegmonous inflammation of the overlying tissues, ending in abscess and the formation of a lacrimal fistula. Finally caries and necrosis of the nasal process of the superior maxilla take place, which usually permanently distort or obliterate the nasal duct.

Lacrimal Gland. — Inflammation of the lacrimal gland occasionally occurs from extension of the process from an orbital periostitis to the fibrous envelope of the gland and thence to the connective tissue framework of its interior. There is usually exophthalmos, severe pain, and a distinct swelling at the upper and outer angle of the orbit. The lacrimal gland has also been known to be the seat of a gummatus infiltration, a secondary process extending from the surrounding connective tissue. The symptoms are the presence of a tumor at the upper and outer angle of the orbit, displacement of the eyeball downward and inward, at times severe pain in the orbit, and extreme sensitiveness to pressure. The tumor not only extends backward into the orbit, but forward beneath the conjunctival cul-de-sac and upper lid, causing ptosis.

Lacrimal Caruncle. — The caruncle may become

inflamed in consequence of dacryocystitis or caries of the lacrimal bone, and may also be involved in a chancre, which has occurred at the inner canthus of the lids, or in the neighboring ocular conjunctiva. Gummatous infiltration of the caruncle has been described by Dr. R. W. Taylor of this city. The caruncle becomes enormously enlarged, deep red in color, firm to the touch, and protrudes between the edges of the closed lids. Persistent antisiphilitic treatment causes a reduction in the growth and eventually atrophy of the caruncle.

Dacryocystitis and Stricture of the Nasal Duct.—This disease almost always extends from the nose, either through the medium of an inflamed and ulcerated mucous membrane or as a result of primary periostitis of the nasal duct or lacrimal bone. There is more or less epiphora, a sense of distention over the sac, then swelling with a discharge of mucus or pus from the puncta on pressure over the sac, phlegmonous inflammation of the overlying tissues, pointing of the abscess, ulceration and the formation of a fistula. It may be both an early and a late manifestation of the constitutional disease. The formation of a fistula should be prevented by an early incision of the caulinuli and sac and thorough division of the stricture of the duct, with the passage of a large-sized steel probe, while persistent constitutional treatment is kept up. If the disease has been of long standing, extensive disease of the superior maxilla is certain to be found, and it may prove impossible to open the caliber of the duct, on account of extensive disease of the bone, which may be either of a carious nature, or more rarely due to a hyperplastic process, with the formation of exostoses or periostoses in the orbital walls. Even here persistent antisiphilitic treatment often works wonders. Should the duct be found obliterated, it will be well to destroy the lacrimal sac by deep cauterization from the anterior surface, and allow the resulting cavity to close by granulation.

Chronic dacryocystitis with stenosis of the nasal duct is by no means an infrequent occurrence in inherited syphilis, and is due to disease of the bony walls of the duct, with periostitis and the development of exostoses.

Syphilis of the Cornea and Sclerotic.—The corneal lesions associated with acquired constitutional syphilis may be classified as follows: (1) Diffuse parenchymatous keratitis, which may involve either the center or periphery of the cornea, and which is always accompanied by iritis. (2) The true keratitis punctata in which numerous punctate foci of infiltration appear in the parenchyma of an otherwise transparent cornea, without iritis. (3) A later stage of the preceding, in which the punctate deposits are accom-

panied by a generally cloudy cornea and by iritis.
(4) Gummatous degeneration of the cornea.

Parenchymatous or interstitial keratitis is far more frequently the result of inherited, than of acquired, syphilis. The acquired form is characterized by a cloudy opacity in the deeper layers of the cornea, consisting of a number of irregular, yellowish-gray spots, more or less closely connected together. These spots usually first appear at the center of the cornea and extend toward the periphery. In this cloudy parenchyma vessels are seen to enter at various depths. The deep circum-corneal ciliary injection is generally absent, and the subjective symptoms of photophobia and lachrymation are but little marked. The process is always slow, lasting not only weeks, but months and even years, and never ulcerates.

True *keratitis punctata* is characterized by the deposit of circumscribed gray spots in the parenchyma. There are no blood-vessels visible, and the intervening corneal tissue is transparent. These spots may disappear as rapidly as they appear, and they never suppurate. The iris does not seem to be involved in these cases.

Gummatous infiltration of the cornea begins at the periphery and extends a varying distance into the parenchyma. It closely resembles a tubercular syphilitide, and usually breaks down and suppurates just as the latter does, and ends in perforation of the cornea.

All these varieties of keratitis belong to the late period of constitutional syphilis. They are all very chronic, but yield to persistent treatment. The local treatment consists of hot fomentation, atropin and cocaine, and leeches to the temple.

The Cornea in Inherited Syphilis.—Our knowledge of the form of keratitis occurring in the subjects of inherited syphilis, we owe mainly to Mr. Jonathan Hutchinson. Chronic interstitial keratitis here begins as a diffuse haziness at the center of the cornea of one eye, with little or no evidence of congestion. There is some irritability of the eye and dimness of vision. The opacity consists of dots in the parenchyma, which at first are distinct from each other. In the course of a few weeks the whole cornea has become more or less densely opaque by extension and confluence of these punctate deposits. The appearance of the eye in this stage has given rise to the name "ground-glass cornea." There is then developed a zone of ciliary injection, and there is photophobia and pain. After a varying period of weeks or months the other cornea is attacked and follows the same course. Vision may be reduced to perception of light. This is sometimes followed by a still more severe stage, in which the whole cornea

becomes scarlet from enormous development of vessels in the parenchyma. The clearing up of the opacity is always excessively slow, but in the course of a year or more the improvement is decided. Even in the most favorable cases, the vision is never quite entirely regained. Almost all these patients present a peculiar physiognomy, consisting of a coarse, flabby skin, pits and scars in the forehead, scars of old fissures at the angles of the mouth, a sunken bridge to the nose, and a set of permanent teeth peculiar for their small size, bad color, and crescentically notched edges of the central upper incisors. When interstitial keratitis and the notched "Hutchinson teeth" are met with in the same patient, the two symptoms are pathognomonic of inherited syphilis. Most of these cases occur in children between the ages of eight and fifteen years. This keratitis is rare in infancy and very rare in adult life.

Syphilis of the Sclerotic.—In this dense, fibrous membrane, syphilis causes two processes: (1) Episcleritis or scleritis, the two being different phases of the same lesion, and (2) gummatous infiltration of the sclerotic.

Episcleritis or Scleritis.—The symptoms are one or more patches of deep congestion on the eyeball, more or less infiltration of the superficial layers of the sclera and a corresponding elevation of the conjunctiva. The vascular injection is deep red or purple in color, and is very deep. There is dull pain and a sense of pressure in the eye. There may be complications on the side of the iris and ciliary body. The disease is very chronic, rarely ends in suppuration, and always leaves behind it a bluish or brownish discoloration. If very chronic in its course, the sclerotic becomes very much thinned from atrophy, and allows the choroidal pigment to become visible; and this always favors the development of saphylomata.

Gumma of the Sclerotic.—This is a purely localized infiltration, somewhat distinctly circumscribed. The growth is generally flattened, but sometimes attains a large size. These gummatous deposits usually occur in the course of the straight muscles of the eye, and are more frequent on the temporal side of the eye. They are moderately hard, sensitive to the touch, and very vascular. Persistent constitutional treatment will effect a cure, but with some distortion of the eyeball. Gumma of the sclera is always a late manifestation of the disease and rarely exists without the choroid or iris also being involved.

Syphilis of the Uveal Tract, Iris, Ciliary Body, and Choroid.—Syphilis may involve the entire uveal tract in one eye alone or in both eyes simultaneously or it may involve the iris or choroid alone. The ciliary body is probably never alone involved.

Syphilis of the Iris.—Iritis is one of the most frequent symptoms of constitutional syphilis. It is in the great majority of instances an early lesion, though it is met with as a late manifestation. As a rule only one eye is attacked at first, though the other soon becomes affected. It may be of three varieties: plastic, serous, or gummatous. The first two varieties do not differ in their symptoms from iritis due to other causes. The sole variety of iritis absolutely indicative of syphilis is the iritis gummosa, and to this variety alone should the term "syphilitic iritis" be applied.

Symptoms.—In plastic iritis these are: deep ciliary injection forming a zone of short, deep, straight vessels around the corneal margin; turbidity of the aqueous humor; swelling and discoloration of the iris; more or less immobility of the iris; irregularity in the shape of the pupil; exudation in the field of the pupil, upon the capsule of the lens; photophobia; lacrimation; defective vision; pain, and increased tension of the eyeball. All of these symptoms may be present, though some are occasionally wanting.

In serous iritis, in addition to the above symptoms, there is a punctate deposit of exudation upon the posterior surface of the cornea. This form of inflammation usually involves also the ciliary body and choroid.

In iritis gummosa the real syphilitic iritis, in addition to the above symptoms, there may be seen in the iris one or more distinct, yellowish-red, nodular elevations, varying in size from a hemp-seed to a pea, either in the sphincter region, or at the periphery, which show a tendency to coalesce.

The prognosis is generally good in the plastic or serous varieties, but doubtful in the gummatous form owing to the tendency of the disease to extend to the ciliary body and end in atrophy of the globe.

Treatment.—The local treatment should consist of hot applications frequently repeated, atropin more or less frequently, leeches to the temples if the pain is severe, and dark glasses. Except in very bad cases, these patients need not be kept in a darkened room. The patient should be brought under the influence of mercurials as rapidly as possible and, if the lesion is a late manifestation, potassium iodid in large doses should be administered. If the attack has resulted in permanent adhesions between the iris and the capsule of the lens it may be necessary subsequently to perform iridectomy in order to allow the iris more play, and to prevent relapsing attacks of iritis and the dangers of subsequent glaucoma.

Syphilis of the Ciliary Body.—Cyclitis, like iritis, may be plastic, serous, or gummatous. It is a serious disease tending to destruction of the eye, and the prognosis is always unfavorable.

Symptoms.—These are usually ciliary injection, very severe pain, tenderness on pressure, diminished tension, diminished vision, due to exudation into the vitreous humor, and a plastic exudation between the posterior surface of the iris and the suspensory ligament and capsule of the lens. The aqueous humor is turbid, and there may be punctate deposits on the posterior surface of the cornea. In cyclitis gummosa the gummatous infiltration has a strong tendency to involve the sclerotic and iris. Here the prognosis is most unfavorable, the whole eyeball tending to shrink rapidly into phthisis bulbi. The treatment locally and generally is the same as for iritis.

Syphilis of the Choroid. — Syphilitic choroiditis may be divided into two classes: one which attacks the anterior segment of the choroid, and is usually connected with iritis and cyclitis, and that variety which is more or less closely confined to the posterior segment of the eye. Both these varieties are known as choroiditis disseminata. The first variety is usually called irido-choroiditis, is always of a severe type, with boring pain, rapidly failing vision, dense opacities in the vitreous, diminution of tension and, in bad cases, rapid atrophy of the eyeball, contraction of the vitreous, and detachment of the retina. The posterior choroiditis is almost always a chronic process, and always involves the retina, and hence, the disease should be called chorioretinitis. Ophthalmoscopically, the disease shows in reddish-yellow or yellowish-white patches of exudation of irregular shape and size, accompanied by a fine dust-like opacity in the anterior part of the vitreous. These patches soon tend to assume an atrophic aspect, and are then surrounded by a zone of pigment. There are several different varieties of this posterior inflammation, which are not easy to differentiate. In the anterior form of the disease the opacities in the vitreous are cobweb-like, or densely membranous, which are sometimes fixed and sometimes floating. The vision is always at once and materially affected.

Treatment.—The treatment consists in the local use of atropin to put the ciliary muscle at rest, occasionally, leeches to the temple; dark glasses, plenty of fresh air, and the bringing of the patient as rapidly as possible under the influence of mercury and potassium iodid. Should the optic nerve become affected strychnin is indicated. The disease is very obstinate in resisting treatment, and the vision is always permanently impaired, even in the most favorable cases, owing to the retina being involved in the degenerative process. The whole uveal tract may be involved in children as a result of inherited syphilis, and even intra-uterine iritis and choroiditis disseminata have been found in the new-

born child. In some cases the writer has seen both pupils blocked by plastic exudation from an intra-uterine iritis.

Syphilis of the crystalline lens, as a primary disease, is unknown. Opacities of the lens and its capsule are met with in syphilitic patients, but only as a result of inflammation of the uveal tract.

Inflammation of the vitreous humor, or hyalitis, never occurs primarily from constitutional syphilis. It is always due to cyclitis or choroiditis.

Syphilis of the Retina and Optic Nerve.—Inflammation of the retina alone, distinct from optic neuritis, is not a common lesion in constitutional syphilis. Associated with choroiditis it is one of the commonest symptoms met with.

Simple retinitis is a rare disease, diffuse in character, and its symptoms are mainly ophthalmoscopic. The fundus is indistinct, there being a distinctly defined mist-like, grayish opacity extending over the posterior zone, and like rays along the course of the blood-vessels. The outlines of the optic disc are blurred, and the disc is very hyperemic, owing to the presence of engorged veins. There is marked diminution of central vision, with a central scotoma in the field, which may be annular. There is night blindness; there are various photopsic manifestations, and sometimes there is photophobia. The prognosis is usually favorable and vision is restored under proper treatment, but the disease is subject to relapses. If the optic nerve becomes involved in the process the prognosis is unfavorable.

Sometimes the retinitis is of the exudative type, with patches of yellowish deposit all over the fundus, accompanied by hemorrhages. This does not differ from the same disease due to other causes, and the prognosis is much more unfavorable.

Central recurring retinitis is a very rare form of syphilitic disease. It is characterized by an opacity in or at the macula, and the appearance of small, white, punctate spots grouped around it. The disturbance of vision and the opacity at the macula appear suddenly, disappear in a few days, but recur in a few weeks. In subsequent attacks there occur irregular white streaks, radiating from the optic disc in all directions. The prognosis is rather unfavorable on account of the marked tendency of the disease to recur again and again.

Almost all cases of retinitis due to syphilis are associated with inflammation of the optic nerve and should be classed under the head of neuro-retinitis.

Syphilis of the Optic Nerve.—When the optic nerve is affected by syphilis, there may be marked ophthalmoscopic changes in the optic disc, or none at all. The visible ophthalmoscopic changes are of three kinds, *viz.*, papillitis or "choked disc," neu-

ritis descendens, and atrophy of the disc. When no ophthalmoscopic changes are visible, the symptoms are all subjective, and consist of, first, amblyopia or amaurosis; second, hemianopsia dependent on disease of some portion of the optic tract between the chiasm and the occipital lobe; third, a fluttering scotoma. The optic nerve may be affected in some portion of its entire course independently, or secondarily, by propagation of the diseased process from the surrounding tissues. When both eyes are simultaneously affected, it is proof that the lesion has involved either the sheath of the optic nerve, or the nerve itself, or both.

Papillitis, or Choked Disc.—This is an inflammation of the intra-ocular end of the optic nerve. It is characterized by intense swelling of the optic disc due to general edematous infiltration, marked stasis in the retinal veins and ischemia in the retinal arteries. The edema extends a varying distance into the surrounding retina. Bilateral papillitis points to the existence of some intracranial process which has caused an increase of the intracranial tension and indirect compression of the optic nerve, but it does not indicate the nature of the lesion which has caused the increased tension. If the papillitis is unilateral, the lesion may be situated entirely within the orbit. The defect in vision does not always correspond to the ophthalmoscopic picture. There may be very little disturbance of vision and no defect in the visual field.

If taken in time the prognosis of papillitis, if the cause is intra-orbital, is fairly good under proper treatment. If the lesion is intracranial, the prognosis is always doubtful.

Neuritis Descendens.—This depends on inflammatory changes in the nerve substance itself, caused by an extension of an inflammatory process from the surrounding tissue to the sheath of the nerve, and thence to the nerve-fibers. This process may extend to the nerve-fibers from the central parts of the brain. Unilateral neuritis descendens points to a lesion in the corresponding nerve-trunk between the chiasm and the orbital end of the nerve. Bilateral neuritis descendens points to a lesion in the nerve between the chiasm and occipital lobe. The most common cause is some gummatous infiltration of the brain or meninges. Vision is first affected peripherally and the defect generally extends toward the center. Both papillitis and neuritis descendens may end in an atrophy of the optic nerve.

Atrophy of the Optic Nerve.—Three forms are met with: (1) Inflammatory atrophy due to papillitis or neuritis descendens. (2) Cerebral atrophy. (3) Spinal atrophy.

In inflammatory atrophy, the disc is an opaque,

dirty yellowish-gray color, with blurred outline, and obscured by a mist. The arteries are very much reduced in caliber and surrounded by white streaks (perivasculitis). In cerebral atrophy, the disc is brilliantly white, the outline sharply cut, the lamina cribrosa very distinct, and the vessels but slightly reduced in caliber. In spinal atrophy the disc is bluish-white, the outline sharply defined, and the vessels but slightly reduced in caliber. This is the kind of atrophy met with in ataxy.

In those cases of optic nerve trouble with no ophthalmoscopic evidence of disease we must depend on the presence of functional disturbances to form an opinion as to the location of the lesion. If the loss of vision is confined to one eye, the lesion may be in front of the chiasm, though it may also be situated in the posterior part of the internal capsule, or even in the cortex. If it is in the internal capsule, there is also present contralateral anesthesia of the other cranial nerves.

In left lateral hemianopsia the lesion must be sought in the right optic tract. In right lateral hemianopsia, it is in the left optic tract, between the chiasm and the occipital cerebral lobe, and usually between the cerebral peduncle and the chiasm. In rare instances both retinitis and optic neuritis have been found in new-born children, the results of inherited syphilis of the intra uterine type.

Syphilis of the Ocular Muscles and Motor Nerves.—Pure myopathic processes due to syphilis scarcely ever occur in the ocular muscles, the lesion almost always involving the motor nerves or their nuclei, and this lesion may be located in the brain, or at the base, or in the orbit. In the latter case the cause is a lesion of the orbital wall, involving the origin of the muscles. Syphilitic paralyses of the ocular muscles are generally late manifestations, rarely occurring within the first six months. They may develop rapidly or slowly, and are obstinate in resisting treatment. Many never are cured. The lesion is usually a gummatous infiltration at the base of the brain, or endarteritis in the vicinity of the nuclei. Isolated paralyses of the eye-muscles are not infrequently the first symptom of general syphilis.

In about three-fourths of the cases it is the motor oculi which is affected, and the abducens in about one-fourth. A very frequent form of syphilitic paralysis is unilateral ophthalmoplegia interna, or paralysis of the sphincter iridis and of the ciliary muscle, and about three-fourths of such cases are syphilitic. Here the cause is endarteritis. Paralysis of the fourth nerve due to syphilis is very rare. Sometimes these ocular paralyses are very late symptoms, the constitutional disease has apparently been cured, and are then usually the forerunners of tabes.

Symptoms.—The most common symptom is diplopia, which may be either homonymous or heteronymous. If the third nerve is affected, in whole or in part, the images are crossed or heteronymous. If the sixth nerve is involved the images are homonymous. In the former case there may be a divergent squint; in the latter, a convergent squint. If there is a difference in the height of the images, the superior or inferior rectus is involved, and it is again the third nerve. If the entire trunk of the third nerve is involved, the eye is divergent, there is ptosis from paralysis of the levator palpebræ, the iris is widely dilated, and the accommodation is paralyzed.

The prognosis is fairly good, but the longer the paralysis has lasted the more unfavorable is the outlook for a cure. There are some rare instances of muscular paralyses due to inherited syphilis.

Syphilis of the Bony Walls of the Orbit.—Disease of the bony walls of the orbit is not a very common manifestation of syphilis. The lesions which occur here are: (1) osteoperiostitis; (2) gumma or syphilitoma of the periosteum; (3) periostosis, hyperostosis or exostosis; (4) caries and necrosis. They are all late manifestations of the disease.

Osteoperiostitis may be acute or chronic. It is manifested by pain and swelling, generally around the orbital margin, and exophthalmos, if the lesion be deeply seated in the orbit, the protrusion being to one side instead of straight forward.

Gummatus periostitis or gumma of the periosteum is always a slow, chronic process, and involves generally the superior orbital margin, but cases have been met with where the syphilitoma developed at the bottom of the orbit, in which case the most marked symptom would be the exophthalmos. Both these processes may end in caries and necrosis, in which case a fistulous opening is formed either through the conjunctiva, or through the tarso-orbital fascia and lid, and several sinuses may form and open at a long distance from the real site of the disease.

The varieties of chronic hyperplastic bone disease met with in the orbit are periostosis, hyperostosis, and exostosis. They are all of rare occurrence, and may go on without any signs of inflammation until the excessive development of bone tissue has reached an enormous size. The exostoses, however, are generally the result of long continued periostitis with suppuration. These diseases are interesting mainly from their rarity, for they respond but slowly or not at all to treatment. In rare cases, however, orbital exostoses disappear rather rapidly under treatment. Periostosis and hyperostosis have in a few instances been met with in young children, the subjects of inherited syphilis.

ETIOLOGY AND FREQUENCY OF SPORADIC PURULENT MENINGITIS.

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LEGE OF PHILADELPHIA.

THE records of post-mortems made at the Philadelphia Hospital from April 4, 1894, to October 26, 1898, show that during this time there were eighty instances in which some form of meningitis was present. The number of cases in each variety is as follows¹: Leptomeningitis, 8; basilar meningitis, 9; pachymeningitis, 20; pachy- and basilar meningitis, 4; basilar and leptomeningitis, 3; complicating typhoid fever, 1; basilar (subacute) 2; chronic, 10; hemorrhagic of brain, 1; hemorrhagic of cord, 2; hemorrhagic tubercular, 1; tubercular, 6; purulent, 13.

The etiologic factors that may contribute toward sporadic cerebrospinal meningitis are many, and rarely the same as that of the epidemic variety; however, in most instances, sporadic cases of purulent meningitis are secondary to a similar infection elsewhere, as disease of the cranial bones, otitis media, mastoid, nasal, or ethmoid disease, erysipelas of the scalp,² traumatism, or by extension along the cranial vessels or nerves. Aside from these cases due to direct extension, there are cases of metastatic meningitis, which may be encountered accompanying pneumonia, rheumatism, dysentery,³ endocarditis, empyema, puerperal sepsis, anthrax and scarlet, typhoid, and other fevers, where the exciting cause is carried through some of the circulatory channels; and lastly, cases due to no describable cause other than primary infection. It is the second and third varieties that I wish to illustrate by the following cases (Case I. is reported through the courtesy of Dr. John Guiteras, Pathologist, and Dr. David Riesman, Assistant Pathologist, and Case IV. through that of Dr. Frederick Packard):

CASE I.—S. S., male, black, aged thirty-one years, was admitted to the medical ward with the following history: cough, pain in left side, headache; had been expectorating blood-streaked material for some days. Physical examination disclosed all evidences of lobar pneumonia, affecting the base of the left lung. Conjunctive jaundiced; examination of urine showed presence of bile-pigment and albumin. Two days later he developed severe pain in the abdomen and head, followed by wild delirium, nystagmus, ptosis, and aphasia, which were soon followed by coma and death.

Autopsy showed extensive purulent meningitis, the exudate covering the entire brain, but more

¹ Classified from pathological diagnosis and notes.

² Analysis of 1674 cases of erysipelas showed meningitis as a complication in one instance (Anders).

³ Two purulent cases complicated dysentery.

marked at the base and in the parietal regions. The spinal cord was not examined. There was consolidation of the left lung involving the entire lower lobe and a portion of the superior lobe (stage of gray hepatization). The kidneys were in a state of cloudy swelling. Other viscera showed jaundice and the usual changes present in febrile conditions. Cultures contained only pneumococci as did cover-slip smears from the meningeal exudate.

CASE II.—F. C., female, aged thirteen years, was admitted to the nervous ward in a semi-comatose condition. Friends stated that her trouble began four days before admission by pain in the head, neck, and back. The head was retracted and drawn to the left, eyes turned to the right, pupils equal, reflexes absent in arms, not increased in lower extremities. Mild delirium with apparent consciousness at times. Temperature 101° F., on admission, fell to 100° before death, which took place a few hours later.

Autopsy revealed the presence of purulent meningitis, involving meninges of both brain and cord, forming almost a complete envelope of exudate which gave the brain a greenish-yellow tint. Several of the cultures from the meninges were sterile, but one from the brain showed bacillus cadaveris and staphylococcus pyogenes aureus; while one from the cord showed only diplococci. Cover-slip preparations showed bacilli and micrococci.

CASE III.¹—J. H., male, white, aged twenty-six years, was admitted with a history of having been seized with headache and vertigo some hours before. On entering the hospital he became unconscious. There was slight facial paralysis, rigidity of the right side; increased reflexes, and slight retraction of the head. Temperature 100° F. on admission, and there was a constant rise to 106° F. prior to death, which occurred two days later. Examination of urine showed a trace of albumin. No sugar, no casts.

Autopsy revealed an extensive purulent exudate infiltrating everywhere the pia mater and arachnoid of both brain and cord, giving to these organs a yellowish tint. Ventricles were distended with fluid and on puncture of meninges in lumbar region considerable fluid escaped. Exudate was also found to extend over roof of third ventricle. Cultures from the meninges of the brain were found to contain the colon bacillus. No cultures were made from the cord. Cover-slip preparations were found to contain bacilli. On section the meninges presented many bacilli and a few organisms which appeared as micrococci.

CASE IV.—R. G., white, about middle age, was admitted to the hospital in an unconscious state. His condition was regarded as a unilateral cerebral lesion. He died ten days after admission. At autopsy a small area of apparently purulent meningitis about 1 cm. in diameter was found along the left fissure of Sylvius. There was also an area of softening in the right lenticular nucleus. Cultures from

this localized area of meningeal inflammation showed the micrococcus tetragenus.

CASES OF PURULENT MENINGITIS AT THE PHILADELPHIA HOSPITAL DURING THE LAST FOUR YEARS.

No. of cases.	Month.	Sex.	Age.	Color.	Nati'n'lity.
1	April	Male	6 months	White	American
2	June	"	1 week	"	"
3	October	"	13 months	"	"
4		"	26 years	"	"
5	April	"	64 years	"	Irish
6	June	"	26 years	"	German
7	March	"	31 years	Black	American
8	May	Female	7 months	White	"
9	August	Male	37 years	Black	"
10	October	"	52 years	White	German
11	January	"	26 years	Black	American
12	July	"	26 years	White	"
13	September	Female	13 years	"	"

In the accompanying table I have considered only those cases in which either the pathological diagnosis or notes pointed clearly to purulent meningitis. Cases in which there was doubt I have placed under other headings.

Strümpel states that cerebrospinal meningitis has continued in Leipsic since 1864, a few cases occurring each year. From a brief review of the literature I think the same can be said of Philadelphia since the epidemic of 1863, an account of which was given by Stillé. From the records of this hospital purulent meningitis is a rather common occurrence, being present in $16\frac{1}{4}$ per cent. of all cases in which any form of meningitis existed.

Cases IX., X., and XIII. were regarded by the pathologist as tubercular. In all cases in which the middle ears were examined the results were negative. Without a bacteriological examination it is impossible to say how many of these cases were purulent, but from the pathological notes I am disposed to believe that some of the cases classified as basilar were probably purulent. It is indeed certain that the pneumonia bacillus sometimes secondarily reaches the meninges and here excites purulent suppuration (Strümpel). The same author also regards this organism as an exciting cause when pneumonia does not exist. Holt, in an article on the bacteriology of the epidemic form of the disease, states that the diplococcus of pneumonia is the organism commonly found, but by no means the only one. "In sporadic cases also, it plays an important part." He credits Netter with having reported twenty-five sporadic cases, of which eighteen were due to the pneumococcus, four to the staphylococcus and streptococcus pyogenes, and various other bacteria in the remainder.

Here is probably the opportune place to speak of the relation between the epidemic and sporadic forms of this disease. Since the report of the Mas-

¹ A detailed report of case made by Dr. J. H. Lloyd, *Internat. Med. Jour.*, November, 1898.

sachusetts State Board of Health, setting forth the investigations made by Councilman, Mallory, and Wright, we can no longer regard the pneumococcus as the cause of epidemic meningitis. These investigators have clearly shown that this form of the disease is produced by the diplococcus intracellularis. The majority of sporadic cases in which bacteriological examination had been made were found to be due to the pneumococcus. However, cases are recorded as being due to the tubercle bacillus, bacillus pyocyanus, bacillus meningitidis purulenti, bacillus anthracis, and typhoid, colon, and the various pus-producing micrococci. The writer is inclined to regard sporadic purulent meningitis as a condition capable of being the results of any pus-producing organism, and with rare exceptions, due to causes other than those involved in the production of the epidemic form. It has been suggested that all forms of purulent meningitis not due to the diplococcus intracellularis prove fatal.¹ This, however, can only be decided by careful bacteriological study of the meningeal fluid during life, and needs further investigation to throw any true light on the subject.

In Case I. no organism, other than the diplococcus of pneumonia, was present. The same organism being found in the lung is sufficient evidence to regard both the meningitis and pneumonia as due to the micrococcus of pneumonia. In Case II. there was a mixed infection. The diplococci found resembled closely in microscopic appearance the diplococcus intracellularis of Weichselbaum, yet its development on different culture media gave widely different reactions, resembling in this respect the organism commonly found in nasal secretions. Here the staphylococcus pyogenes albus may have played an active part in the process, and to what extent the diplococcus contributed toward the condition cannot be estimated. Cultures in Case III. showed only the colon bacillus, and cover-slip preparations, made from the exudate, contained bacilli. Sections of the meninges were found to contain bacilli, and few apparent micrococci, which prevent determining positively that the case in question had for its sole cause the colon bacillus. Case IV. was regarded by the neurologist as one of syphilitic softening. The only organism which could have contributed toward the condition was the micrococcus tetragenus.

The City with the Lowest Death-rate.—The death-rate in Erie, Pa., was 10.87 in 1896; 10.94 in 1897, and 10.53 in 1898. The population of Erie was estimated by the Mayor, January 1, 1898, to be 57,000. It is doubtful if many other cities can show as good a death-rate for three consecutive years; but Toledo, with 150,000 inhabitants, had a death-rate in 1898 of 10.33.

¹ Report of the Massachusetts State Board of Health, 1898.

RECENT INVESTIGATIONS UPON MALARIA.¹

By W. S. THAYER, M.D.,
OF BALTIMORE, MD.

UP to the last year our ideas as to the manner of infection in malaria have been mainly speculative. There have been three chief hypotheses: (1) That the disease is acquired through the gastro-intestinal tract; (2) that infection takes place through the inhaled air; (3) that the poison may gain access to the body through the bites of insects.

The solution of this problem has been greatly delayed by our ignorance as to the form in which the malarial parasites exist outside the human body. Experiment and analysis of the evidence go to show that there is little to support the view that the disease may be acquired through the gastro-intestinal tract. Experiments by Mariotti and Ciarocchi, Marchiafava and Celli, Marino, Zeri, Grassi, and Feletti have shown that the administration of large quantities of water from highly malarious districts, by the mouth, by rectum, and by inhalations, as well as the actual ingestion of blood containing living malarial parasites, is incapable of causing infection.

And while in the absence of our knowledge of the form in which the parasites exist outside of the body it is difficult to positively disprove the possibility that the disease may be acquired by inhalation, there is no thoroughly satisfactory evidence in its support. On the other hand, it has been known for many years that inoculation, subcutaneous or intravenous, of the blood of an infected individual will transfer the disease. Some years ago Laveran advanced an hypothesis that infection might take place through the bites of mosquitoes. Since this expression of opinion several other similar diseases in animals, diseases due to hematozoa, have been shown to result from the bites of insects. Thus, the parasite of Texas-cattle fever, an organism in many ways similar to the malarial parasite, has been shown by Professor Theobald Smith to be transmitted by the bites of the cattle-tick (*Boophilus bovis*), while the Tsetse-fly disease or nagana is introduced through the bites of the Tsetse-fly. More recently Patrick Manson of London has been an ardent supporter of the idea that the mosquito might play an important part in malarial infection.

In all varieties of the malarial parasite certain forms upon reaching maturity fail to sporulate, but in many instances after five, ten, or fifteen minutes undergo a process of flagellation, which was early described by Laveran, the separate flagella breaking away often from the mother element, moving about rapidly in the blood with an act-

¹ Remarks made at the Centennial Meeting of the Medical and Chirurgical Faculty of Maryland, Baltimore, April 25-28, 1899.

ive serpentine motion. There has been much dispute as to the significance of these elements. Laveran believed that they represented a very important stage in the life history of the organism, while Dock first suggested that they might be bodies intended to preserve the life of the parasite outside of the human body. The Italian observers, as a rule, vigorously opposed these views, believing that flagellation was a degenerative progress.

Manson, who had demonstrated the fact that the mosquito forms an intermediate host for the filaria sanguinis hominis, ventured the hypothesis that this insect might play a similar part in connection with malaria. Surgeon-Major Ronald Ross, acting upon the suggestion of Laveran, observed the development of flagellate bodies in the fresh blood within the stomach of the mosquito. This single observation was not remarkable, inasmuch as the same is often noted when mature parasites are observed for a sufficient length of time outside of the human body. But afterward in carefully studying mosquitoes he observed remarkably large pigmented structures in the stomach wall of several insects which had previously bitten infected human beings. The pigment in these elements was so similar to that previously contained in the malarial parasite that the observer was impressed with the possibility that they might represent some extra-corporeal stage in the life history of the malarial organism. At this stage in Ross' researches the malarial season came to an end, and he was obliged to continue his studies upon the parasites of birds which, as is well known, are closely similar to those of human malaria. The results of these observations of Ross form the most important contribution to our knowledge of this subject that has been made since the discovery of the parasite by Laveran. If a certain variety of mosquito, the gray mosquito (*Culex pipiens*), be fed upon birds infected with the *protozoa* (Abbé), there appear, two days after feeding, in the wall of the middle intestine of the insect, pigmented bodies similar to those just described. These structures gradually increase in size until at the end of the seventh day they have a diameter as large as sixty micromillimeters. They have a distinct capsule and contain a granular material showing at first a few pigment granules which afterward disappear. On reaching maturity they protrude from the surface of the mosquito's intestine into the body cavity. Shortly after this period rupture occurs, and a large number of small spindle-shape trypanosome-like bodies escape which enter the circulation of the mosquito. Ross further discovered that many of these accumulate within the cells of the veneno-salivary gland of the mosquito. The outlets of this gland unite into a

common duct which descends to the extremity of the mosquito's proboscis. The discovery of these spindle-shaped bodies in the cells of the salivary gland instantly suggested to Ross a possible method by which infection might occur. And experiments showed that mosquitoes fed a proper length of time before upon infected birds were capable of transferring the disease to non-infected birds in almost every instance. Ross' admirable experiments, conducted with the parasites of birds, the nature and behavior of which is so similar to those of the malarial parasites that they have by some individuals been considered to be the same organism, abundantly justified the assumption that similar conditions might exist with the parasites of human beings.

At the same time, independently of Ross' work, Italian observers, Bignami, Grassi, and Dionisi, had come to the conclusion, from careful study of the etiological conditions of the disease, that the theory of infection through the bites of mosquitoes was by far the most probable hypothesis in connection with malarial fever in man. Grassi had gone so far as to narrow down upon two particular varieties of mosquito, the *Anopheles claviger* and the *Culex peniculatus*, as the probable varieties of mosquito which were capable of inoculating the disease. The ordinary house-mosquito, the *Culex pipiens*, that in which Ross had been able to cultivate the parasites of birds, Grassi believed to be harmless. Bignami, indeed, succeeded apparently in inoculating with malaria a human being who had voluntarily subjected himself to the experiment by subjecting him to the bites of these suspicious varieties of mosquito. Ross communicated the results of his experiments to the Italian observers, sending them specimens illustrative of the conditions observed, and during the months of November, December, and January, Grassi, Bignami, and Bastianelli succeeded in completely confirming all that Ross had found in birds upon the human being. They have shown that if examples of the *Anopheles claviger* be placed upon an individual infected with malaria in whose blood full-grown forms capable of flagellation exist, bodies almost exactly similar to those described by Ross appear on the second day in the stomach wall of the insect, undergo similar processes of development, and rupture, setting free the same small spindle-shaped bodies which accumulate in the cells of the salivary gland. The experiment has been rounded out to complete success in the case of the estivo-autumnal parasite. Three mosquitoes which ten days before had been allowed to bite an individual infected with estivo-autumnal malaria were placed upon a non-infected individual, the result being the development of a characteristic estivo-autumnal malaria.

The three mosquitoes were killed after biting this individual and full-grown bodies were found in the walls of the stomach, while the cells of the salivary gland were filled with the small spindle-shaped "sporozooids."

The result of these observations has, therefore, been a positive demonstration of one method by which malarial infection may occur, namely, through the bites of mosquitoes. Is this the only method? This is a question which as yet we cannot answer. From analogy with similar diseases, and from a careful study of the etiological conditions of malaria, the Italian observers are strongly inclined to believe that this is the case.

Are we to assume that the mosquito can acquire the parasite only by biting infected human beings? Is it not probable that there are other forms in which the parasite exists outside of the human body? These are questions which remain to be answered. It should be said that certain of the capsule-like bodies in the stomach wall of the mosquito do not give rise to these small spindle-shaped structures, but contain a smaller number of large brown spores which there is some reason to believe may be more resistant forms of parasite, and may possibly be transferred in some way to the mosquito larvæ.

An interesting point in connection with these discoveries is that they have completely supported Laveran in his original view that the flagellation of the malarial parasite was an important vital process and not as others had supposed, degenerative in nature. The first important observations tending to support this view were, as is well known, made by MacCallum two years ago. MacCallum showed that in certain parasites of birds, as well as in the human being, the free flagella penetrate other full-grown forms of the parasite in such a manner that there can be little doubt that the process is one of fecundation. In the birds' parasite, in which this process was first studied the fecundated form changed into the active "*pseudovermicule*" described by Danilewsky. This pseudovermicule has a sharp point and a steady forward motion as observed under the field of the microscope which enables it to penetrate into and destroy almost any object in its way. As soon as Ross discovered the pigmented bodies in the stomach wall of the mosquito he assumed that the parasite gained entrance into the walls as a pseudo-vermicule, the result of fecundation as described by MacCallum. The discovery of MacCallum, then, seems to supply the last link in the chain, inasmuch as it will be remembered that both Ross and the Italian observers insist that the presence in the blood of forms capable of flagellation is necessary to the development of the pigmented structures in the stomach wall.

In connection with this work, a few remarks concerning the observations of Professor Koch, which have been appearing during the last year, may not be out of place. Both in the reports of his studies in Africa and in a recent communication in the *Deutsche medicinische Wochenschrift*, in which he describes his studies in Italy, Koch has detailed observations confirming much that has been done by French, Italian, American, Russian, and German observers. The publications have, unfortunately, appeared in such a form as to give most readers the impression that the observations are original discoveries. They have been so regarded in many non-medical, and in some, particularly German, medical publications. It is but fair to say that Professor Koch's observations, while entitled to all the attention which is of course due to their distinguished author, are solely confirmatory in nature. Koch has not as yet made a single original observation in this field. Everything which he has described has been previously worked out and reported by others, and it is unfortunate, as Dr. Nuttall has elsewhere observed, that his publications should have taken such a form.

CLINICAL MEMORANDUM.

A SURGICAL SUGGESTION.

THE PURSE-STRING METHOD FOR TONSILLAR HEMORRHAGE.

By ROBERT H. M. DAWBARN, M.D.,

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IN a lecture upon tonsillar hemorrhage some little time ago, as reported by a friend and former student of mine, Professor Lefferts alluded to my method, suggested for use only in obstinate cases, of a purse-string suture about the tonsillar stump, tightened and tied; and he gave it a *coup de grace* by alleging that it is impossible of accomplishment—the patient meanwhile struggling, etc.

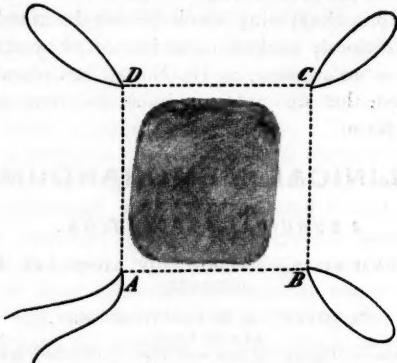
The fact is, however, that I have myself in one instance (*Medical Record*, December 17, 1892) used this impossible method successfully and did not find it even difficult. But my patient was, of course, asleep from anesthesia. Previous to and during the chloroforming the patient was gagged and the tonsillar stump was held between the forefinger on the stump and the thumb outside, on the angle of the lower jaw, so that little or no bleeding went on. Then the anesthetized patient was placed with the bleeding side uppermost, and by the aid of a forehead mirror and a large, semicircular needle, with needle-holder, the constricting purse-string was placed quickly and with ease; as the blood ran away by gravity from the surface I wished to see.

As the bleeding regularly comes mainly from one of the ascending two of the six tonsillar arteries it would seem sensible to begin with the lowermost of the four

stitches necessary (*A* to *B* in the accompanying diagram). Very possibly tightening this will be found to control the bleeding, and thus either render the other three stitches even easier of insertion, or perhaps needless. The silk purse-string thus tied around the base of the stump should remain in place from thirty-six hours to two days. The ends being left a little long will facilitate removal.

Regarding the cases in which this device may be needed it is admitted that although children may *almost* die from tonsillar hemorrhage they do not *quite* do so. This fact is, however, no excuse for trying every other plan which may perhaps succeed before using one so simple and safe and which must succeed.

It is in adults with tough, hard, hypertrophied tonsils that the ugliest cases of bleeding are found as a rule. Not every practitioner has a snare, which, it is admitted, would, if used slowly, be safer for the amputation in these adults than is the guillotine. To avoid the purchase of one more instrument by the overburdened general practitioner I would suggest as a new departure that when from the na-



The shaded portion represents the tonsillar stump. The letters indicate the order in which the needle is four times introduced, following the dotted lines.

ture of the offending tonsil he has reason to fear trouble, he would do well to place my purse-string suture *before* using the tonsillotomy. To do this upon the adult and before any bleeding has occurred is certainly easy enough—and under minor anesthesia—the patient sitting upright in a good light. It is worth noting that eucain *B* is better than cocaine when tonsillotomy is in question because the eucain does not contract arterioles and thus shrink the tonsillar mass so that the surgeon cannot remove as much as he otherwise would do. Anesthesia being accomplished, we now do the tonsillotomy and tighten up the suture previously applied in case bleeding justifies its presence as a precautionary measure.

On October 24, 1898, I had an opportunity to make use of the plan. The patient, Mr. A. L. O'B., a middle-aged dispensary patient, had a very large, hard, and chronically tender left tonsil, which for many years had annoyed him, inducing numerous sore throats and threatening quinsy each time, with great swelling and pain, but never actually suppurating. No trouble was experienced in passing the precautionary purse-string after applying for ten minutes a large compress wet in 10-per-cent. eu-

cain *B* solution. It was with a pleasant sense of security against dangerous bleeding that the amputation was then performed. Perhaps the amount of blood that would ordinarily have been lost might not have jeopardized his life, but this patient was quite anemic and I preferred that he should not lose even a drop of his vital fluid needlessly; therefore, in this instance, I tightened and tied the purse-string before amputating the tonsil. Of course the result was an entirely bloodless operation. Enough morphin was subsequently employed to render the patient moderately free from annoyance by the suture, which was removed after thirty-six hours in this instance, eucain *B* being again applied before the stitch was cut and drawn out.

Regarding the depth to which the needle may safely go, this is considerable. The ordinary estimate is that the internal carotid is 1.5 cm. away from the base of the stump; the external carotid 2 cm.; and both rather behind the tonsil than transversely opposite to it. The late Dr. Hall, when professor of anatomy in the College of Physicians and Surgeons, New York, made some special dissections regarding these points, and taught that the external, not the internal, carotid is the nearer to the tonsil, and that in event of severe hemorrhage this will regularly come mainly from the ascending palatine branch of the facial artery.

There is no need for entering the needle deeply in the purse-string method. It is obvious that all we need is to have it far enough beneath the surface to avoid its cutting or tearing its way out while being tied. For the same reason the silk should be quite coarse, ordinary pedicle-silk by choice. It must, of course, be boiled first.

In conclusion I offer a diagrammatic sketch showing the placing of the four stitches in their proper order. Of course when the ends are pulled upon the three loops will all disappear beneath the surface.

MEDICAL PROGRESS.

Incision and Evacuation of Distended Intestinal Loops in Obstruction.—MAYLARD (*Brit. Med. Jour.*, April 8, 1899) says that he has obtained better results in his operative work in cases of intestinal obstruction since he has followed the plan of making one or more incisions into the distended loops of intestine and evacuating the contents before returning them to the abdominal cavity. It is easy to protect the peritoneum from infection by bringing the loop well outside before opening it, and afterward closing the incision with a Lembert suture before the loop is replaced. The handling of the intestine which this treatment entails seems to do good rather than harm, acting as a stimulant to muscular contraction and emptying the engorged blood-vessels. If peritonitis is present, the injection of about an ounce of sulphate of magnesia in solution should be made through the evacuatory incision after the bowel has been emptied of its fecal matter.

Resistance to Quinin of Certain Forms of Malaria.—CAMAC (*Johns Hopkins Hosp. Bull.*, April, 1899) says

that the temperature-chart after the administration of quinin will often enable a physician to determine whether or not a fever is malaria, and if so, of what type. It is desirable to know the character of the fever-curve before quinin is given. Fever which shows no sign of breaking after the administration of quinin every four hours for three days, is not malarial, and to give the remedy a further trial is not only useless but possibly harmful. If the fever yields earlier than the third day on moderate doses, it is likely to be of the tertian or quartan type, either double or single. In the estivo-autumnal type the temperature often fails to touch normal between the paroxysms. Its resistance to quinin has led Italian observers to speak of the gradual destruction of its parasite by quinin, as "fractional sterilization." In this form, naturally, the administration of the quinin should be continued longer than in the others.

Malaria with Typhoid Fever.—In a discussion on typhoid fever occurring among soldiers of the late war with Spain, DA COSTA (*Phil. Med. Jour.*, May 6, 1899) reported ten cases of typhoid fever complicated with malaria. There was no doubt about the clinical diagnosis, and it was in almost every case confirmed by the Widal test and by microscopical demonstration of the malarial parasite. In every case it was the tertian or estivo-autumnal organism which was present, generally the former. The majority of the patients had no chills before the typhoid developed, nor until late in the disease, possibly during a relapse. The chill was followed by marked temperature rise and sweating. The course of the fever was slow in all of these patients, lasting for more than four weeks. One case existed without chills. The practical conclusion is that one ought to examine the blood for malarial parasites in every case of typhoid with prolonged and irregular fever, or with chills, or with frequent relapses. In some of Da Costa's cases the malarial organism was not found at the first examination, but was found later. From 16 to 20 grains of quinin given daily for a few days was found to be sufficient to break up the fever. Smaller doses were then administered to full convalescence.

A New Method of Drainage after Suprapubic Cystotomy.—KACZKOWSKI (*Centralbl. f. Chir.*, March 18, 1899) has devised an apparatus which prevents the leakage of urine into the tissues after suprapubic cystotomy, and therefore materially hastens the time of recovery as well as adds to the comfort of the patient. It consists of an hour-glass-shaped balloon of rubber, through the center of which a catheter passes, and which has a little tube through which air can be forced into the apparatus to distend it. It is introduced immediately after the operation, and is blown up tight enough to prevent leakage around it. The catheter can be clamped or not as occasion demands. The use of this simple device is said also to prevent infection of the bladder from without. The inventor has used it in one case with perfect satisfaction.

The Cross-Suture of Tendons.—VULPIUS (*Klin. Ther. Woch.*, March 12, 1899), who has had a personal experience with some 70 cases of cross-suture of tendons, speaks in

the most encouraging manner of this method of making good the loss of function occasioned by a partial paralysis. Over fifty of these cases occurred in patients suffering from paralytic flat-foot, or club-foot, either equinus or calcaneus. Some of the cases were simple, as those in which the extensor hallucis tendon was affixed to that of the tibialis anticus, while in some instances, parts of different muscles had to be sutured to the tendons of two or three paralyzed muscles. In other instances the sartorius was sutured to the tendon of the quadriceps; or the flexor carpi ulnaris to the tendons of the extensor longus digitorum. Such operations in the upper extremity are more difficult than in the lower, as the individual muscles are better developed and it is harder to educate them to an opposite use. A middle group of muscles, corresponding to that of the peronei is besides wanting. The necessities of each case must be studied, as one can not go by regular rules in this method of treatment.

Report of Progress in Dermatology.—GILCHRIST (*Maryland Med. Jour.*, April 8, 1899) gives a summary of the recent advances in dermatology. White has shown that ringworm of the scalp in Boston is generally (97 per cent. of the cases) of the small-spored variety. Under the microscope mosaics of glistening round spores 2 or 3 micromillimeters in diameter are seen clustered around the hair. Epilation, washing with Castile soap and warm water every morning, and the application of the following ointment will suffice to effect a cure in six months in most cases:

R.	Sulph. flor.	{ aa	3 i
	Acid carbonic	{ aa	3 ss
	Naphthol	{ aa	3 ss
	Adipis	{ aa	3 i.

In the large-spored cases the spores are usually quadrangular with rounded corners. Treatment of these scalp cases is much more severe than in the small-spored variety, and one has to perform epilation and apply such drugs as mercury, chrysarobin, pyrogallic acid, and formaldehyde.

Unna's plan for the treatment of eczema of the palms and soles consists in the application every four to six hours of starch poultices to which a little boric acid has been added. A good deal of the sodden epidermis is removed by rubbing with a rough, soft, dry cloth between the changes of poultices. In about four or five days the palms become soft, smooth, and pliable. The following ointment is then applied:

R.	Acidi pyrogallici oxidati	gr. v-xxx
	Lanolini	3 ss
	Ol. amygdal.	{ aa	3 ii.
	Aq. dest.	{ aa	

A liquid soap which Skinner has found very useful in dermatological practice consists of oleic acid, 2 ounces; alcohol, 90 per cent., 3 ounces; solution of ammonia, a sufficiency, and water to 6 ounces. The ammonia is added drop by drop until the odor can faintly be detected. It is then allowed to stand for seven days and filtered through kaolin.

As a good general ointment for eczema the same authority recommends anhydrous wool-fat, $\frac{1}{2}$ ounce; camphor, 30 grains; glycerin of subacetate of lead, $\frac{1}{2}$ ounce, and coal-tar if indicated.

Suture of the Sphincter Ani Muscle in Cases of Complete Tear of the Perineum.—KELLY (*Johns Hopkins Hosp. Bull.*, January-March, 1899) draws particular attention to the control of the function of the bowel exercised by the sphincter muscle, asserting that a tear in this muscle will cause fecal incontinence. Even in cases in which the anus presents a normal appearance the surgeon should not fail to recognize that the sphincter may be ruptured and the torn ends separated by a considerable interval. Kelly's operation under such circumstances is intended to avoid the objections which have been raised to the operations of Emmet and Hegar. Hegar's plan is to suture the internal sphincter by fine silk and the external sphincter by fine catgut. What Kelly insists upon is the more thorough dissection of the ends of the sphincters, and the removal of all fibrous tissue. If in addition the external sphincter is separated from the overlying skin for a considerable distance, it will lie deeper after the sutures have been inserted, and hence danger from infection will be lessened. If the tear is in the external sphincter only, it is freed as described for a half inch or more, and the catgut sutures inserted but not tied. The rectal mucous membrane is then sutured, the suture line extending out over the skin. Then the sutures in the sphincter are tied, and afterward a silkworm-gut suture is inserted to take the tension off from the buried sutures in the sphincter. When the internal sphincter is also involved its ends are sutured by fine silk stitches which enter and leave through the mucous membrane of the rectum. Post-operative enemas of warm oil given through a soft catheter are recommended.

THERAPEUTIC NOTES.

Local Treatment of Pneumonia in Children.—CHASE (*Boston Med. and Surg. Jour.*, April 13, 1899) had an opportunity to study the value of external applications in the treatment of pneumonia in children. Most of the forty-five patients observed lived in tenement-houses. The surroundings were, therefore, not especially favorable. All but two were over a year old. Of thirty-nine who had lobar pneumonia, thirty-eight recovered. Six had bronchopneumonia, and of these four recovered. The effect of poultices was especially noted. These were made light, of flaxseed and cheese cloth, and covered with oiled silk or paraffined paper, and weighed not more than 6 ounces. They were placed on the affected part while the child was in bed, and removed in 30 or 40 minutes. Rarely were more than six or eight applied in twenty-four hours. Observation convinced him that poultices diminish pain, and have a soothing effect, often producing sleep; that they relieve dyspnea and reduce the number of râles; that they are rarely opposed by the children, and by adding to the comfort of the patient they maintain his strength and so facilitate his recovery.

Mustard paste was tried in a few cases and seemed also of benefit.

To reduce hyperpyrexia, the writer made use of cold sponging with water and alcohol. No case was observed in which a cold pack seemed indicated, but the cases were mild, and in no instance did the temperature reach 104° F., and remain there for six hours.

Emphasis is laid on the importance of fresh air, and of judgment on the part of the nurse to let the child remain quiet when it so desires, and to turn it when it becomes choked by secretion.

Treatment of Ozona by Citric Acid.—HAMM recommends insufflations of a mixture of equal parts of citric acid and sugar of milk, practised three times a day by the patient, in addition to a daily flushing of the nasal fossa. He claims that the fetid odor is entirely removed by this treatment, even if pus and crusts continue to form, this favorable result lasting for some time. Secretion is also diminished.

Tribromid of Salol in Mental Diseases.—VIALLON has employed this drug as a sedative and hypnotic in the asylum at Dijon, and has found it comparatively valueless for acute cases of mania, etc., or for hysteria, but very useful for cases of chronic mania, general paralysis, etc., in which periods of excitement occur. Thirty grains given at 7 P.M., in soup or some other liquid, induces sleep, or at least a diminution of excitement. Viallon considers it superior to bromid of potassium for such cases.

Elixir of Terpin Hydrate for Bronchitis.—The following formula is recommended by CRINON:

B	Terpihydrat	gr. lxxx
	Glycerini { aa	3 iiss
	Spiritus { aa	3 ii
	Mellis despumata	m. lxxv.
	Tinct. vanillae	

M. Sig. Two to four tablespoonfuls a day.

For Burns of Small Area.—

B	Europhen	gr. xliv
	Vaseline { aa	3 i.

M. Sig. For external use. Apply 3 or 4 times a day.

Dressing for Umbilical Cord.—In connection with the dry treatment of the cord, by which baths are delayed until healing is complete, the infant being bathed on the lap only, while care is taken not to wet the umbilical region, argilla (alumina) is recommended as an excellent cord-powder. It is applied twice a day until several days after the cord has become detached. Suppuration is said never to occur when this method is adhered to.

For Migraine of Hysterical Patients.—

B	Ext. erythroxyli fl.	3 i
	Sodii bicarb.	gr. xi
	Sherry wine	3 iiss
	Oleosacchari limonis	gr. lxxx
	Aq. melissa	3 iii.

M. Sig. One teaspoonful 3 times a day.—*Leyden.*

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J. RIDDLE GOFFE, Ph.M., M.D., Editor,
NO. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM IN ADVANCE	\$4.00
SINGLE COPIES10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	7.50

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in registered letters.

LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK,
AND Nos. 706, 708, & 710 SANSOM ST., PHILADELPHIA.

SATURDAY, MAY 20, 1899.

**CHRISTIAN SCIENCE AND THE PRACTICE
OF MEDICINE.**

A NUMBER of deaths have recently occurred of people suffering from various disorders while under the treatment or rather the non-treatment of Christian Scientists. These have again attracted public attention acutely to this cult. Two of the deaths have been in the neighborhood of New York City, and it is a satisfaction to note that in each case the authorities have taken steps to bring the matter before the proper legal tribunals.

The failure to convict Christian Scientists in other cities in various parts of the country probably foreshadows a similar failure in these cases. The principles of religious toleration and freedom of conscience are so stretched by the judiciary of the country as to include under that guise this sacrilegious imposition on the community.

This is unfortunate. Meantime no better course presents itself than to continue to stigmatize all this unwarranted, fanatical sacrifice of life and health by citing before the courts as criminals all those concerned in this unchristian work, so that a suitable

public opinion on this subject may gradually be developed. It is true that persecution usually proves only a means to further fetter the minds and opinions of fanatics, and often leads them to a more vigorous propagation of their ideas, which are by this means effectively called to public attention. In this case, however, the publicity given the acts of so-called Christian healers who, for monetary considerations, at critical moments take upon themselves all responsibility for the life and health of fellowmen will be productive of none but good results.

The recent order of the president of the New York Board of Health to the assistant sanitary superintendents of the various boroughs of Greater New York is very timely. The characterization of the healers as "evil-minded persons, who take advantage of their more ignorant neighbors professing that they are endowed with wonderful healing faculties," while not true of the rank and file of the followers of Christian Science has proved in almost every case that has come prominently before the public to be true of those who professed to have wonderful healing powers. Sordid motives have evidently been the mainspring of their pretended exercise of the curative faculties given them by a knowledge of Christian Science.

This is a commendable effort on the part of the New York Board of Health to solve an important and knotty legal and medical question. The manner of getting at it, too, is well advised since it is proposed that these assistant superintendents shall cooperate with the various medical societies of their districts, and shall consult with them as to the best means of accomplishing the permanent suppression of these practices. That the Board of Health is acting well within its powers is evident from the fact, so strikingly brought out in our recent investigation of this cult, that for Christian Scientists no such thing as contagious diseases exists, and that their failure to recognize these affections constantly exposes people to infection. The matter is an important one, also, for the followers in Christian Science. We sincerely hope that the united efforts of the Board of Health by the judicious use of the power it possesses, in cooperation with the various medical societies, will prove successful in suppressing this criminal imposition on the credulity of misguided people.

CLIMATE IN THE TREATMENT OF TUBERCULOSIS.

AN impression that would have been inevitably received by that impressionable creature, the ordinary practitioner, in attendance at the recent meeting of the American Climatological Association here in New York is that the value of mere climate as a therapeutic factor in the treatment of pulmonary tuberculosis has greatly deteriorated of late years in medical estimation. It seems to be more and more generally conceded that it is not the combination of favorable meteorological conditions we call a suitable climate which has effected the cures of consumption at health resorts so much as the attention to rest, diet, hygiene, fresh air, and sunlight, which has always characterized the medical direction of patients in such places.

This impression as to the comparative efficacy of the regulated out door life rather than of mere climate is confirmed by a number of considerations apart from the proceedings of the Climatological Association. It has been clearly demonstrated by the valuable results obtained at such places as Davos, that even cold temperatures do not militate against the value of a place as a health resort for consumptives. Recent extensive European experiences with sanatoria for consumptives, especially in Germany, show that almost any climatic conditions and any altitude may favor the progress of a consumptive's cure if other therapeutic factors are properly provided.

In the vicinity of a number of the larger German and Swiss cities sanatoria for consumptives are giving excellent results. It seems only necessary that they should be situated at a reasonable distance from the dust and dirt and, above all, the contamination of the air incident to large bodies of population to prove suitable places for successful treatment of tuberculosis. Air, sunlight, rest, and nutrition are the essential elements in the successful treatment of phthisis. As these important indications have asserted themselves more and more, cures have been more common, and even the compromising hospital treatment of consumption in large cities has taken on a highly encouraging aspect.

It is an almost universal experience that consumptives improve even in the public wards of a general hospital when first admitted. Rest and suitable

nourishment for these poor patients whose nutrition has often been neglected at once sets up a conservative reaction in the organism which causes general improvement. That this amelioration is not continued indefinitely is due to the fact that the disease is usually too far advanced in such patients to yield permanently to the improved environment. The monotony of hospital life palls on them, vital interest is lessened, appetite diminishes from lack of proper exercise and general nutrition again suffers in consequence.

The lesson of these recent developments is a very interesting one for the general practitioner. It is difficult to induce patients with only incipient phthisis and very little discomfort, perhaps, to leave their homes and friends and go to a distant though favorable climate. It is not difficult, however, to persuade them to go a short distance from home, and that too at an early stage of the disease. The incipient stage is that in which rapid and permanent cure of the disease is effected by sanatorium treatment. Rest, careful attention to nutrition, sunlight, and pure air can be secured without traveling thousands of miles. And clinical experience has shown that cures are effected and lasting results obtained near home.

It is interesting to note how long it has taken for this idea to percolate into the present stratum of accepted medical truth. Years ago, as was stated at the Climatological meeting, Chicago, when a frontier town, was considered by Eastern physicians as a health resort for tuberculosis, and numbers of tuberculous patients were sent there. Good and lasting results were secured too in the early days, but finally the influx of population drove the health center farther West. The wonderfully clear air of Colorado and its possibilities in permitting patients to live out of doors has retained for it the reputation of a health resort despite growth in population. This has been fortunate, for the study there of the best conditions for the cure of tuberculous patients by a set of interested and eminent specialists has taught the world much of the therapy of the dread disease. Their wonderful country remains for the present the ideal place for consumptives who have the financial means and are willing to break up existing home ties and make a new home in a new country.

MEDICAL EDUCATION IN JAPAN.

THE February number of the *Sei-i-kwai Medical Journal*, which has been published at Tokio for the last eighteen years by the Sei-i-kwai, or Society for the Advancement of Medical Science in Japan, contains an interesting account of the condition of medical education and practice in the Island Empire. Modern education in Japan dates back only some twenty years, and for that length of time in Tokio University only. Ten years will cover most of the modern education furnished in the other schools, so that one can gain some idea of the rapid changes for the better that have been going on in the last decade, and which are still in progress. Thus in 1897 it was ordered that the University of Tokio be duplicated at Kioto. This has been done as far as the departments of physics and engineering are concerned, but the medical department will not be opened until fall.

The Tokio Imperial University has 23 professors, besides a number of assistants, and a student attendance this year of 256. Like all other medical schools in Japan, it has a four-years' course, each year lasting from September to June. There are two hospitals connected with it, having 328 free beds and 186 beds for pay patients. The courses of study, including laboratory and clinical instruction, compare favorably with those of many American colleges. The fees are \$2.50 a month, and are remitted to those of each class who the previous year received the highest marks for scholarship and good conduct. In the provinces there are five medical schools under the control of the Imperial Government, and three under the provincial governments of the particular provinces in which they are situated. There are also two private medical schools in Tokio. The graduates of the last two are required to pass a State examination before beginning practice.

There are at present about 40,000 licensed practitioners in the whole country, 6000 of whom received the license by virtue of their graduation from government schools; 8500 by passing the State examinations, while 24,000 (including 10,000 followers of the Chinese system, bone-setters, sham-pooers, administrators of acupuncture, priests, etc.) were in practice at the time the present law went into effect, and were accordingly licensed without

examination. The remaining 500 persons are sellers of nostrums, charmers, and midwives, licensed for limited districts only, in which no physician is accessible. Thus it appears that more than one-half of those who practice the healing art have some knowledge of modern medicine, a very good showing indeed for the youngest member of the family of modern nations.

ECHOES AND NEWS.

The School of Medicine of Georgetown University.—The commencement exercises of this medical school were held May 15, 1899. The usual interesting program was presented, the address to graduates being delivered by Dr. John Madison Taylor of Philadelphia.

Commencement Exercises of Bellevue Medical School.—On Tuesday evening, May 16, 1899, the commencement exercises of the University and Bellevue Hospital Medical College were held at the Metropolitan Opera House, New York. There were 162 men in the graduating class. The president of the University, Dr. McCracken, presided, and the Rev. Dr. Burrell, pastor of the Collegiate Church, delivered the address.

Internes at the Cook County Hospital.—Dr. Hektoen of Chicago announces that the official statement regarding the successful candidates for the internship in the Cook County Hospital at the recent examinations reads as follows: From Rush Medical College, 6; College of Physicians and Surgeons, 4; Northwestern University Medical School, 2. Of the four alternates two were from Rush and two from the College of Physicians and Surgeons.

To Disinfect Havana.—Mr. Woolf, the inventor of a system for making sea-water a germicide by means of electricity, is superintending the construction of a new disinfecting-plant which was expected to be in operation in Havana about May 15th. By this means 50,000 gallons of water will be sprinkled upon the streets of Havana every day. The water will also be used by the sanitary authorities for disinfecting the houses of fever victims.

The Prevalence of Smallpox.—The United States Marine Hospital Service reports that during the week ending May 6, 1899, there were reported in the United States 93 cases of smallpox with 5 deaths; in foreign countries 160 cases with 65 deaths. The high mortality from this disease in foreign countries is undoubtedly due to lack of vaccination. It is a well-known fact that previous vaccination renders an attack of smallpox mild and insignificant.

Officers of the New York State Board of Health.—The New York State Board of Health, at its annual meeting at Albany on May 11th, reelected Dr. Daniel Lewis of New York City as its president. Dr. F. W. Smith of Syracuse and Dr. S. Case Jones of Rochester were re-elected tuberculosis commissioners. At the request of

Governor Roosevelt, Dr. Lewis and Commissioner Owen Cassidy were appointed a committee to investigate an alleged nuisance in Catskill caused by the State brick works in that city.

Officers of the Climatological Association.—At the recent meeting of this Association, held in New York, the following officers were elected for the ensuing year: President, Dr. Abraham Jacobi of New York City; vice-presidents, Drs. R. H. Babcock of Chicago and J. W. Brannan of New York City; secretary and treasurer, Dr. Guy Hinsdale of Philadelphia; representatives to the Executive Committee of the Congress of American Physicians and Surgeons, Dr. Frederick I. Knight of Boston and Dr. Roland G. Curtin of Philadelphia. The next meeting of the Association will be held at Washington, D. C., during May, 1900.

Pure Food Investigation.—The Senatorial Pure-Food Investigating Committee met in Chicago, May 11th. The first witness was Dr. Henry G. Piffard of New York City. He believed that Congress should order an investigation of every branch of food in the market and that pure-food laws should be fixed by Congress and accepted and supplemented by the State Legislatures. Professor A. B. Prescott, of Ann Arbor, Mich., discussed the effect of using preservatives on meat, which he considered deleterious. Professor Victor C. Vaughan, also of Ann Arbor, corroborated Dr. Prescott's testimony and declared that the adulteration of any kind of foods or drinks, if allowed, should be governed by law as to the extent of the adulteration and the kinds of adulterants used.

The Fifth District Branch of the New York State Medical Association.—The fifteenth annual meeting of this association will be held in Wurzler's Building, Brooklyn, Tuesday, May 23, 1899, at 11 A.M. The president's address, by Dr. Joseph D. Bryant, will open the discussion of malignant disease. This will be followed by Dr. Edward K. Dunham on "The Nature of Malignancy in Neoplasms," Dr. L. Grant Baldwin on "Malignancy in the Female Genito-Urinary System," Dr. Jonathan Wright on "Malignant Disease of the Nose and Throat," Dr. Max Einhorn on "The Early Recognition and Management of Malignant Disease in the Digestive System," Dr. J. S. Gouley on "Malignant Disease in the Male Genito-Urinary System," and Dr. Wm. B. Coley on "The Treatment of Inoperable Malignant Tumors."

Obituary.—Dr. William Arthur Gorton, for eleven years Superintendent of the Butler Hospital for the Insane at Providence, R. I., and widely known as an expert on insanity, died on May 1st in Boston, Mass.—Dr. Frederick Karl Christian Ludwig Büchner died in Darmstadt, Germany, on May 1st. He was seventy-five years old. Dr. Büchner was the author of the famous book on "Force and Matter," published in 1855, in which was set forth an atomistic and materialistic view of the universe. This book had great influence in its day as a popular exposition of the ideas of modern materialism. Dr. Büchner wrote many other works of the same character.—Dr.

William Whitney Godding, Superintendent of the Government Hospital for the Insane in Washington died in that institution on May 6th.—Dr. William Russell, Harvard's oldest graduate, died on May 6th at Barre, Mass. He was ninety-nine years old.

Death of a Practical Philanthropist.—The death of Richard Cadbury, one of the firm of Cadbury Brothers, who, since 1872, have carried on a wholesale grocery-house and manufactory near Birmingham, has brought out many facts in reference to his personal and business life. His donations to various objects mount up into the hundreds of thousands of dollars; but even more interesting is the fact that from the day of the starting of the factory until the present time, when nearly 1500 people are employed in it, there has never been a strike, nor any difficulty about wages. The interest of the members of the firm in the social well-being of their employees has been untiring. There are cooking-, dining-, and reading-rooms connected with the factory buildings, and gardens and arbors outside of it for rest and conversation, and each morning before beginning work every one connected with the business, from the head of the firm down, gathered in the women's dining-room and listened to a chapter of the Bible and a few words of Christian counsel. Nearly all the work done was paid for by the piece and the service rendered was of the highest character. It is gratifying to record that such attention to the moral and physical health of their employees resulted in very handsome business returns to the owners of the establishment.

Christian Scientists Prosecuted.—Two cases in New York treated by faith "healers" are now engaging the public attention. The first is that of Mrs. Charlotte M. Barguet of Mount Vernon, who died on May 3d. Mrs. Barguet had been ill for a long time, but no physician was permitted to see her. Instead, one Mrs. Maggie Fowler, a Christian-Science "healer," by arrangement with a son and a daughter of the deceased, made many visits, during which she sat by Mrs. Barguet's bedside and meditated. This was all the "treatment" Mrs. Barguet received. Coroner Banning of Mount Vernon held an inquest on May 8th. An autopsy had been made by Drs. Nathan Nutting and George C. Meiss, who reported that death was due to dropsy and acute pleurisy. The Coroner's Jury rendered a verdict to the effect that proper treatment was "precluded by the deceased holding to the so-called Christian Science faith, aided, abetted, and encouraged by other followers of that faith, to wit: Mrs. Maggie Fowler, Liston W. Barguet, Jr., and Miss Ethel L. Barguet." Mrs. Fowler and Mr. Barguet are held in \$1000 bail each to await the action of the Grand Jury; Miss Barguet is held as an accessory without bail. Two months ago Lizzie Krauz, twelve years old, of Brooklyn, became ill. Physicians were called in who advised her removal to a hospital, a toe on the left foot having become gangrenous. Instead, her mother dismissed her physicians and called in one Mrs. Müller of 312 East Twelfth street, Manhattan, having heard of remarkable healing powers that were attributed to the latter. Mrs.

Müller applied German tea and a paste to the affected limb and prayed that it might be cured. The limb grew worse and the mother, when the gangrene had finally spread to the knee, had the child removed to the hospital. The limb was amputated above the knee on May 6th and hopes are entertained of the child's recovery. Mrs. Müller received fees amounting to \$51. She is not a registered physician and has no apparent authority from any source to practise medicine. She was arrested on a warrant issued by Justice Brenner and will be prosecuted. President Murphy of the Health Board has expressed a determination to prosecute all persons who pretend to cure disease by methods not sanctioned by enlightened medical practice. The assistant sanitary superintendent in each borough will hunt up fake "healers." Various medical societies are assisting the Health Board.

American Gynecological Society, Program of the Next Meeting.—The twenty-fourth annual meeting will be held at Philadelphia, May 23d, 24th, and 25th. The sessions will be held in the Hall of the College of Physicians, corner of Thirteenth and Locust streets. The profession is cordially invited to attend. First day.—Tuesday, May 23d, morning session at 9 o'clock. Roll-call, reception of guests, etc. Address of welcome by Dr. Edward L. Duer of Philadelphia. (1) "Early Abdominal Section for Fibroid Tumors, with a Tabular List of All Operations Prior to 1865," by Charles P. Noble of Philadelphia. (2) "Etiology of Non-malignant Rectal Stricture in Women," by Reuben Peterson of Chicago. (3) "Sixty-five Consecutive Abdominal Sections without Death; with Clinical and Pathological Reports," by Hunter Robb of Cleveland. (4) "A Case of Spondylosis, with Demonstration of the Pelvis," by J. Whittington Williams of Baltimore. Afternoon session at 2.30 o'clock. (5) "Report of the Committee on Antistreptococcal serum in Puerperal Sepsis," by William R. Pryor of New York. (6) "Report of a Case of Kraurosis Vulvae," by J. Montgomery Baldy of Philadelphia. (7) "Inversion of the Uterus," by B. Bernard Browne of Baltimore. (8) "Thrombosis Following Celiotomy in Aseptic Cases," by Henry C. Coe of New York. (9) "Clinical Data Bearing upon Tubercular Peritonitis," by Egbert H. Grandin of New York. (10) "The Avoidance of Infection Following the Operation for Complete Tear of the Recto-vaginal Septum" and "The Localization of Obscure Pain in the Side," by Howard A. Kelly of Baltimore. Second day.—Wednesday, May 24th, morning session at 9 o'clock. (11) "Is a Sloughing Process at the Child's Navel Consistent with Asepsis in Childbed?" by Robert L. Dickinson of Brooklyn. (12) "Surgical Treatment of Acute Puerperal Sepsis, with Special Reference to Hysterectomy," by H. N. Vineberg of New York. (13) "The Abuse of the Curette in Puerperal Fever," by Robert A. Murray of New York. (14) "Experience in the Use of Tuffier's Angiotribe in Intrapelvic Surgery," by Clement Cleveland of New York. (15) "The Use of Compression Forceps in Salpingo-oophorectomy and Hysterectomy, with Remarks upon the Angiotribe," by I. S. Stone of Washington. (16) President's address at 11

o'clock. Afternoon session at 2.30 o'clock. (17) "Vaginal Celiotomy," by A. Lapthorn Smith of Montreal. (18) "The Treatment of Broad Ligament Cysts by Vaginal Incision and Drainage," by T. J. Watkins of Chicago. (19) "Surgery of the Ovaries and Tubes per Vaginal Incision," by William H. Wathen of Louisville. (20) "Surgery of the Ovaries," by Fernand Henrotin of Chicago. (21) "Remote Results of Shortening the Round Ligaments by Vaginal Section," by Henry T. Byford of Chicago. (22) "The Scope of Vaginal Work," by J. Riddle Goffe of New York. Executive session at 5 o'clock. Third day.—Thursday, May 25th, morning session at 9 o'clock. (23) "Tuberculosis of the Kidney as an Indication for Nephrectomy," by Edward Reynolds of Boston. (24) Abdominal Operations for Conditions Complicating Typhoid Fever," by J. Wesley Bovée of Washington. (25) "Management of Surgical Injuries to the Ureters," by Beverly McMonagle of San Francisco. (26) "Use of Iodoform Gauze in Pelvic Disease of Women," by William R. Pryor of New York. (27) "Conservative Gynecology," by Seth C. Gordon of Portland, Me. (28) "Report of the Committee on the Use of Mammary and Thyroid Extracts in Solid Tumors of the Uterus," by William E. Moseley of Baltimore. In memoriam: (1) "Theophilus Parvin, M.D.," by William H. Parrish of Philadelphia. (2) "James H. Etheridge, M.D.," by Fernand Henrotin of Chicago.

VISIT OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION TO THE LOOMIS SANITARIUM.

ON Thursday, May 11th, the members of the American Climatological Association, who had been holding their sessions for the two preceding days at the New York Academy of Medicine, devoted the third day of their meeting to a visit to the Loomis Sanitarium for Consumptives at Liberty, Sullivan County, N. Y. Through the courtesy of the Ontario and Western Railroad a special train was provided for them. Though not in the early part an ideal day for sight-seeing, the weather cleared in the afternoon, and gave an excellent opportunity to judge of the beautiful scenery and the invigorating mountain air. The opportunity to see the sanitarium and its surroundings under the unfavorable circumstances of a rainy day was not without its advantages, since it afforded an excellent idea of how light and free from depressing influences the atmosphere of the place is compared to that of the city and sea coast during rainy weather.

After a generous luncheon a visit in parties of eight or ten was made under the guidance of nurses and physicians to the dozen or more houses that make up the sanitarium. The institution is able to accommodate about seventy patients, and has at present very nearly that number of inmates. The charges per week are from \$12 to \$25, and at present there is difficulty in providing accommodations for all those who desire to come. There is a resident medical staff and eighteen nurses at the institution, though the infirmary is not large and is intended

rather for intercurrent illness among the patients than for those who are confined to their rooms and require constant medical care because of their advanced tuberculous condition. The latter class of cases is not deemed desirable, and there exists a city branch of the sanitarium for patients deemed incurable. The city branch is not self-supporting, but the sanitarium at Liberty is expected to be, and is proving itself to be.

That the directors of the Loomis Sanitarium were not mistaken in their opinion that there was need for an institution where a class of patients would get sanitarium treatment for tuberculosis for which they were able and willing to pay reasonable charges, if certain comforts and a certain amount of exclusiveness and association with others of their class were provided for them, is evident from the financial success of the institution. That the methods employed and the situation are eminently favorable factors for the treatment of tuberculosis is clear from the published results, which are excellent, and which bear comparison with the results of sanitarium treatment anywhere in the world.

A feature of the nurses' training at the sanitarium seems to deserve special notice. After the regular training of two years is finished nurses may stay for post-graduate work, which consists of practice in details designed to fit them for rendering assistance to doctors in their offices. They are taught the microscopy of sputum, the chemical and microscopical examination of urine, the keeping of doctors' accounts, and the making of abstracts from medical journals, including as far as possible abstracts from German and French; in a word, everything that will enable them to relieve the physician of certain routine work for which he often finds it difficult to get the time.

The members of the Climatological Association returned to New York City by their special train late in the evening well pleased with their visit and with many expressions of confidence in the future of the sanitarium treatment of tuberculosis as it is conducted at no great distance from the patients' homes.

CORRESPONDENCE.

THE YELLOW TINGE OF PALMS AND SOLES IN TYPHOID.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—Referring to your statement on page 467 that little attention had been given in this country to the yellow tinge of palms and soles in many cases of typhoid fever (I should say approximately 75 per cent. in my own observation—this guess being subject to correction from records) I beg to say that if you will consult the files of the MEDCIAL NEWS I am sure you will find an editorial reference to it from my own pen, crediting the observation, then recently reported from Germany, to the late Dr. Ellwood Wilson of Philadelphia. I have demonstrated it to my classes at the Philadelphia Hospital since 1890 as "Wilson's sign," and have known it since Dr. A. J. Biddle, who derived it from Dr. Wilson, showed it

to me in 1883. How much older the observation is, I do not know. "It bobs up serenely" as something new every little while.

Yours truly,
SOLOMON SOLIS-COHEN.

PHILADELPHIA, April 18, 1899.

PARTIAL RETENTION OF CONSCIOUSNESS DURING ANESTHESIA.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—Dr. Goldan's report of "An Extraordinary Case of Retained Consciousness During Anesthesia," in the MEDICAL NEWS of April 15th, seems to have created considerable interest among the medical profession. Will you kindly permit me to offer a solution of the phenomenon?

As is now well known, the nervous system is made up of a multiplicity of neurons, each consisting of a cell and two functionally different sets of processes, viz.: the dendrites and the axon or axis cylinder.

The psychic neurons, those located within the cerebral cortex, have exactly the same anatomical structure as a central sensory or motor neuron, that is, each one consists of a cell with its processes, its dendrites and axon. The axis cylinders must of necessity be extremely short, as they nowhere pass beyond the limits of the gray matter. When the processes of these neurons are agitated by stimuli it is felt by the ego as a sensation, from which, and upon which, is built the entire fabric of mentality. If there is a difference in the general mobility of the psychic neurons in different individuals why may there not be a difference in the mobility of the special neurons of any one individual?

I believe all will agree that anesthetics act by paralyzing the processes of the neurons. That under its influence they fall so far asunder that stimuli are powerless to bridge over the hiatus between them, consequently stimuli fail to reach the psychic elements of the brain, and as a natural corollary, no sensation can be felt. The processes of the common sensory neurons become paralyzed and, of course, sensation of pain cannot be evoked. In this manner, one by one, the areas involved in the special senses lose their sensibility until finally no form of stimuli finds its way into the mental precincts. The patient is then said to be fully anesthetized.

In the case of Dr. Goldan's patient I infer that she was fully anesthetized with but one exception, and that exception was the neurons concerned in the process of audition. I can readily understand how it is possible that the auditory neurons and those of the auditory centers might be the last to succumb to the influence of the anesthetic. It was only necessary for them to be a little more stubborn than those of the other senses. It required a more than ordinary degree of anesthesia to paralyze them. As long as their processes were not disconnected it was perfectly natural that they should perform their function as usual, and I see nothing extraordinary in the fact that the patient was conscious of a conversation going on; that she heard an instrument drop, or a knock at the door, or a voice through the speaking-

tube. If stimuli instigated by the waves of sound succeeded in passing the barriers between the auditory neurons and the psychic neurons of the auditory centers, the result could possibly be none other than the causation of the consciousness of sound. Yours truly,

H. H. STONER, M.D.

ROCK RAPIDS, IOWA, May 1, 1899.

[This application by our correspondent of the neuron theory to the phenomenon under discussion constitutes an interesting but extremely fanciful hypothesis and has the value of hypothesis only without even demonstrated or accepted analogy to support it. The neuron theory, even at the hands of its most enthusiastic advocates, has never extended to the psychic field. It is in its entirety an assumed premise and, therefore, may or may not be correct in its conclusions. It is, however, quite worthy of careful consideration.—ED.]

OUR PHILADELPHIA LETTER.

[From Our Special Correspondent.]

LIQUID AIR AS A GERMICIDE—TUMOR OF THE CAUDA EQUINA—TREATMENT OF RODENT ULCER BY CATAPORESIS—PHENOMENA AND MECHANISM OF INHERITANCE—ANNUAL COMMENCEMENT OF JEFFERSON MEDICAL COLLEGE—HEALTH STATISTICS.

PHILADELPHIA, May 16, 1899.

"THE Resistance of Bacteria to Cold" is the title of a paper presented by Dr. M. P. Ravenel to the Pathological Society, May 11th, in which the results of some experiments with liquid air, made in March, 1898, were reported. The claim frequently expressed that liquid air is a germicide has led Dr. Ravenel to make this premature report, for while this agent has a temperature of 312° F. below zero, it is far from being proved that it is a germicide. Experiments were carried out by placing silk threads in sterile water to which had been added cultures of anthrax spore, diphtheria and typhoid bacilli, and the bacillus prodigiosus; these threads were then immersed in the liquid air for periods from one to sixty minutes, and then transferred to a culture-medium of bouillon. In no case was any effect noted upon the vigor or life of the organism. In the many experiments made in this line it has been found that sporeless organisms are retarded in their growth by freezing for one hour, and frequently destroyed when the time is extended beyond this period. Typhoid bacilli, however, have been found experimentally to be able to survive freezing in ice for more than three months, and practically we know this to be true, as is evidenced by the epidemic which occurred in this State in 1885, when feces after being frozen all winter caused an epidemic coincident with the spring thaw. In regard to the use of cold as a germicide, however, Dr. Ravenel concludes that it cannot be relied upon so far as any degree of temperature thus far obtained, with our present means of application, is concerned.

In the discussion Dr. Riesman asked whether 50° or 100° F. additional would make any difference after zero was once reached, to which Dr. Ravenel replied that he believed not. Dr. Stengel expressed himself as surprised that as long as liquid air is destructive to more

highly organized tissue, it does not affect the organisms, for while a globule of liquid air may be held in the hand, owing probably to the formation of a layer of air under tension (vapor), which protects the tissue, the length of time to which the organisms were exposed excluded this phenomenon. It also seemed likely that cold would be injurious to the organisms inasmuch as ice to the chest in pneumonia is believed by some, though ridiculed by others, to do good and possibly does so by retarding the pneumococcus which is sensible to cold. Dr. Coplin called attention to the difference in the volatility of the gases forming liquid air, and suggested that changes might be induced in "stale" liquid air which would have some bearing upon the subject, to which Dr. Ravenel relied that these changes were present, "stale liquid air becoming blue in color as the oxygen volatilizes while normally it is of the color of glycerin."

At the same meeting, under the title of "Tumor of the Cauda Equina," Dr. Joseph Sailer reported a case of primary sarcoma of the cord, which is an extremely rare condition, only two cases (both doubtful) being recorded in the literature as primary, and only four authors having reported cases of secondary sarcoma, which were melanotic, as was Dr. Sailer's. The tumor, which was fusiform in shape ($1\frac{1}{2}$ by $2\frac{1}{2}$ by $\frac{1}{2}$ inches), granular, and contained numerous hemorrhagic foci, sprang from the left side of the cauda, and was enclosed in a firm capsule. There was no evidence of any infiltration of the cord, nor were the vertebrae diseased. The tumor was composed of pigment, spindle-shaped connective-tissue cells, with oval nuclei, and was in an unusual position, between the anterior and posterior roots of the left side. A most careful search failed to reveal the slightest sign of a tumor elsewhere in the body, and it was therefore regarded as primary.

At the Philadelphia County Medical Society, May 10th, Dr. G. Betton Massey exhibited a patient suffering from "rodent ulcer," or slow-growing epithelioma. When the patient, who was a physician, first presented himself, the ulcer was the size of two silver dollars, and had already eroded the eye, exposing the fatty tissue of the orbit and part of the skull. The treatment consisted in cataphoresis, produced by means of strips of zinc and mercury after small punctures had been made in the ulcer. Although cocaine cataphoresis was done simultaneously, the patient was unable to stand a current of more than $2\frac{1}{2}$ to 10 milliamperes. An immediate effect in the production of an area of necrosis, surrounded by new inflammatory tissue, was noted, according to Dr. Massey, and he regarded this, his first attempt to treat carcinoma of the short hair-follicles by cataphoresis, as a marked success.

Professor E. G. Conklin of the University of Pennsylvania, at the same meeting read a paper, entitled "Phenomena and Mechanism of Inheritance" in which he defined inheritance as the sum total of all the qualities which are passed from parent to offspring. As phenomena he mentioned the inheritance of like qualities, of qualities from the father or from the mother, and the blending of qualities from both as exemplified in the off-

spring of negro and white which usually takes a color between, or the blending of qualities which produce in the child entirely new attributes. He called attention to inheritance in anatomical characteristics, of which stature, color, etc., are examples; to physiological, of which longevity, the tendency to beget twins, etc., are examples; to pathological, of which monstrosities and deaf-mutism are examples.

As to the manner of mechanism, as all hereditary transmissions take place through two cells (the egg and the sperm), it is a question of studying the cells. This was discussed very fully by Dr. Conklin, the substance of his remarks being that as the chromozones of the cells are probably the bearers of hereditary traits, and these are equal in quantity in every cell in the body, it is evident why heredity is of the male as well as the female although the sperm is so small compared to the egg, for each contains chromozone which is constant in quantity.

Dr. Conklin's definition of acquired and inherited characteristics is that the former are those developed in response to extraordinary environmental and the latter to ordinary environmental conditions. Yet he believes they must both be truly inherited and as an example stated that to speak Chinese, English, and other languages is an acquired characteristic, yet *to speak* is inherent. Then arises the interesting question as to whether these *acquired* or unusual conditions will bring about like results in the second generation. There is little evidence to prove this true.

As an example it is supposed that changes due to use and disuse of faculties are the easiest to prove transmitted yet there is no evidence to support this view, for if it is adduced, as an example, that animals needing to climb and run have developed long limbs, so it can be deduced that animals who do not need to run should shorten their limbs which is not true. Dr. Conklin believes that *inherited habit* goes hand in hand with *inherited structure* and that evidence for hereditary mutilation is therefore unreliable, of which the "docking" of sheep's tails which has been going on for years without resulting in any change in the natural tail, is an example. So, too, the experiment of a German botanist who transplanted plants from all parts of the Continent to his garden where, in the thirteen years he kept them, their descendants gradually acquired the characteristics of native plants; yet when transplanted back to their original habitat they immediately reverted to their original type. For these and other reasons, therefore, Dr. Conklin does not believe in the transmission of acquired characteristics. In the lengthy discussion which followed, Dr. Mills stated that he was inclined to believe in the transmission of acquired characteristics of which he believes there are many instances in disease. Dr. Riesman quoted Zieler as believing in this transmission and said that acquired immunity to disease, if transmitted, would prove this. The transmission of immunity, however, has not been proved, for rabbits made immune to tetanus give birth to young which are also immune if they *nurse from an immune animal*, but not otherwise. This would preclude the chromozone of the cell as being the seat of transmission. Dr. Lautenbach quoted Bell

as having concluded that acquired deafness is not transmissible, though congenital deafness is.

Class-day exercises of the graduating class of Jefferson Medical College were held Saturday evening and the annual commencement on Monday. Hon. William Potter presided at the latter, an oration was delivered by Judge Mayer Sulzberger and the valedictory by Dr. de Schweinitz. In the evening the annual banquet of the Alumni Association was held at the Art Club.

The total number of new cases of contagious diseases occurring in Philadelphia during the week ending May 13th, was 271, reported as follows: diphtheria, 73 cases, with 14 deaths; scarlet fever, 45 cases, with 2 deaths; typhoid fever, 153 cases, with 22 deaths.

OUR LONDON LETTER.

[From Our Special Correspondent.]

PRACTICAL WORKING OF THE CONSCIENCE CLAUSE—PENSIONS OF ASYLUM PHYSICIANS—ADULTERATED SAUSAGES—HONOR TO DR. LEONARD WOOD—MELTING-POINT OF FATS—TUBERCULOSIS IN THE ROYAL DAIRY—SKULL OF SIR THOMAS BROWNE.

LONDON, May 6, 1899.

EVEN cowardice may give excellent counsel. The late Government surrender to popular clamor and anti-scientific prejudice, the renowned "conscience clause," is working unexpectedly well. Some time ago we called attention to its surprising results at Oldham and Burnley, the hot-beds of the "anti" movement, and now at the close of its first quarter's operation, the President of the Local Government Board is able to congratulate himself and party that the number of vaccinations under it has far exceeded that of the corresponding period for many years past.

The Liverpool School of Tropical Medicine has shown a distinct faculty for "arriving" already. Its opening exercises were held on April 22d, as announced, under the presidency of Lord Lister, before the distinguished audience of invited guests mentioned last week, almost every one of whom was present. The ward built for the school in the Royal Southern Hospital was dedicated in the afternoon, and a banquet held in the evening, with the public-spirited merchant prince, Mr. Alfred Jones, to whose generosity the scheme is indebted for the major portion of its sinews of war, in the chair.

The proposed amendments to the Lunacy Bill are exciting some uneasiness in the minds of medical officers of asylums, in respect to their pensions. The present provision is a fairly equitable one, a physician being entitled on retirement to a yearly pension of at least one-sixtieth of his pay and emoluments for each year of his service. That is, after twenty-years' service, a pension of one-third of his regular salary; after thirty years, one-half of his regular pay. The new proposal calmly ignores all this and provides that if the retiring officer shall have displayed "diligence satisfactory to the committee" this magnificent body may "grant such allowance as they think proper," thus making not merely the amount, but the very pension itself dependent upon the whim or favor of an autocratic board, an arrangement which few, who

have had any experience with the frequent ignorance, unreasonableness, and tender mercies of official bodies, will have any confidence in.

The *Lancet* still continues to expose the skeletons of our gastronomic family cupboards. It has just reached sausages, and we are, of course, prepared here for revelations which will cause our *arrectores pilorum* to contract, but the results are agreeably disappointing. No mention whatever is made of the classic claw or the traditional trousers-button, and the only adulterants referred to are the tame and comparatively unobjectionable horse-flesh, and bread tinted with ferric oxid. The interesting statement is made that horse-flesh is so rich in glycogen that its presence can be detected by the iodine test, even in as small proportions as five per cent. of the mass. The analysts find colored bread by far the most common adulterant, and as popular taste in England prefers a certain proportion of this substance in sausages, they recommend that a maximum bread-percentage should be established by law. And this is certainly needed, for some brands of sausages which one stumbles upon in the market here, are little more than well-flavored poultices.

A most sensible warning has just been issued by the Government of Natal, against the prevalent practice among English physicians of sending tuberculous patients in all stages of the disease out to South Africa, indiscriminately, often in almost destitute circumstances, apparently in the vague hope that the climate is a sort of specific, and will restore the strength so rapidly as to enable them to earn a living by out-door work. The report very properly points out that, as we have found out by bitter experience with this delusion in California and Colorado, consumptives in the third stage are really better off at home, that public hospitals are few and hard to get into, and that all the expenses of sickness are higher than in England, and the food and accommodations often most inadequate. Many a poor young fellow has been sent out to die in some rough, little frontier town, where it was impossible to secure proper accommodations, or even the ordinary comforts of civilized life.

A most ingenious method has just been devised for determining the different melting-points of fats, a test much used in detecting the presence of suets in butter. Two platinum wires coated with the fat to be tested are connected with the two poles of a battery. They are then plunged into a cup of mercury, the temperature of which is gradually raised by a Bunsen-burner. As soon as the melting-point of the fat is reached, the coating is, of course, dissolved from the wires and a circuit made between them through the mercury, the passage of the current ringing an electric bell. All that is necessary is to listen for the bell, and when it rings read off the thermometer which stands in the mercury.

The *British Medical Journal* pays a most unusual and gratifying compliment to the American profession and nation by publishing in its last number an excellent portrait of the medical hero of Santiago, General Leonard Wood, with a sketch of his life taken from the April number of the *Buffalo Medical Journal*.

Another honor conferred upon us last week was the

election of Dr. Frederick S. Dennis of New York as a Fellow of the Royal College of Surgeons. The Honorary Fellowship of the College is one of the highest honors which can be won by an English-speaking surgeon, and is only granted by the Council at rare intervals.

The College of Surgeons has appointed as its delegates to the International Congress on Venereal Diseases Jonathan Hutchinson and Alfred Cooper.

The death was recently announced of Mr. Jabez Hogg, the well-known eye consultant and author of that most successful book, "The Microscope," which passed through no less than fifteen editions.

The slaughtering of the Queen's dairy-cattle for tuberculosis, mentioned by the Prince of Wales in his Marlborough House speech, which attracted such wide attention, has now been reported upon by Professor Macfadyean, the well-known veterinarian, by whose advice it was carried out. The herd was first tested by tuberculin, and so many of them reacted that it was decided to slaughter all of them, when no less than *thirty-six out of the forty* were found to be tuberculous. And as if this were not enough, four of the cows had a "septic" disease of the udder, and five were riddled as to their livers with *echinococcus* cysts. Professor Macfadyean says that the stabling, food, and care of the herd were simply ideal, but ninety per cent. of tuberculosis is something frightful, and well may "uneasy lie the head that wears a crown" if this is the sort of milk and butter which it has to subsist upon.

The proposed erection of a statue to Sir Thomas Browne, author of the famous "Religio Medici," in his native town of Norwich, has called attention to the fact that his skull now occupies a place of honor in the Norwich Hospital Museum, where the writer had an opportunity of examining it a short time ago. It is of a beautiful, well-balanced dolichocephalic type, now recognized by ethnologists as that of the highest races, rather low in the frontal, but very broad and full in the parietal and occipital regions. His grave was opened by accident, while repairing the foundations of the church in 1840, and his skull and coffin-plate, with rather irreverent enterprise, were secured by the museum. So well preserved were his remains that the hair was nearly perfect and of a bright red-brown color, closely corresponding to the descriptions given in his biographies. The gentle Sir Thomas, in spite of his shrewd and scientific turn of mind, evidently shared one of the pleasing delusions of his age, for the quaint Latin inscription on his coffin-plate states that the casket is filled with a powder "corporis Spagyrici"—whatever that may be—which will turn its leaden shell into gold, though what satisfaction he expected to get from such a post-mortem triumph puzzles one to imagine, unless he expected to wear it as a sort of "golden slipper" on Resurrection Day.

"*Bulletin of the Cleveland General Hospital.*"—The first number of this new medical quarterly does credit to its editor, Dr. Charles J. Aldrich, and to the staff of the hospital. The make up is attractive; its original articles are all clinical memoranda from the hospital wards and are of a thoroughly practical character.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

TREATMENT OF PHTHISICAL PATIENTS WITH ANTITUBERCULOUS SERUM—PREVESICAL HERNIA—BILARY CALCULI IN INFANTS—CURE OF CANCER BY OOPHORECTOMY AND THYROID EXTRACT—SKIN AFFECTIONS IN RENAL DISEASES—DEATH AFTER GAS AND OXYGEN FOLLOWED BY CHLOROFORM.

AT the Royal Medical and Chirurgical Society, March 28th, WILLIAMS and HORROCKS reported the failures which had followed the treatment of several tuberculous patients with antituberculous serum, obtained from a horse. The general condition of the patients, and the examination of their chests and sputa, showed that the disease progressed steadily, and in some instances rapidly. A second series of experiments was undertaken, with serum taken from the horse at a much longer period after inoculation (seventy-two days), and the doses employed were much smaller (from 1 c.cm. up), while all of the patients chosen had limited lesions. The results under these conditions were gratifying. All of the patients gained in weight and strength; the tubercle bacilli in their sputum decreased in all instances save one; while physical examination showed that the areas of consolidation and the cavities had ceased expanding, or had actually diminished in size. Various cocci which were present had disappeared. The experimentors were encouraged to proceed with this method of treatment.

At the session of April 11th, MAKINS read a paper on prevesical hernia, based on a personal experience. A man, aged forty, after exposure to a storm was seized with violent pain and vomiting. He was found to have a reducible right inguinal hernia. The symptoms persisted after the reduction, but subsided under rest in bed, light diet, and poultices. In three weeks the patient suffered a similar attack, which was relieved in the same way. Eight weeks after the first attack the abdomen was opened over a hard mass in the suprapubic region, which proved to be a peritoneal pouch containing adherent omentum, and one adherent loop of small intestine. The sac was removed, and the wound sutured. It had no connection apparently with the right inguinal hernia. The author mentioned four cases of preperitoneal hernia in which the internal sac projected into the vesical region, but these did not seem to him to be true prevesical cases.

HUTCHINSON related the case of an otherwise healthy man who had had for a long time a reducible inguinal hernia which gave him no trouble. He was seized with pain in the lower abdomen and vomiting. Examination showed a fulness to the inner side of the ring, and abdominal section was performed. Immediately to the right of the bladder there was a pouch in which was a strangulated loop of intestine. It is noteworthy that in all such recorded cases, an ordinary hernia pre-existed. The origin of such a hernia is obscure, but it is plain that if symptoms persist after the reduction of a hernia, one ought to open the abdomen and seek the cause of obstruction, just as he would if there was no visible hernia.

At the Pathological Society, April 4th, STILL reported three cases of biliary calculi in infants, aged nine, eight,

and five months. There were no symptoms during life pointing to this condition, except that one child screamed frequently, and drew up its legs as if in abdominal pain. There was no jaundice. The calculi were very small, the largest measuring only one-eighth inch in diameter. They seemed to consist of pure pile pigment. No less than fourteen of twenty-three collected cases of calculi occurring in children were in infants less than ten months old. Biliary calculi must, therefore, be reckoned as one of the causes of persistent jaundice in the new-born, as well as one of the causes of colic in young infants.

At the Medical Society, April 10th, HERMAN showed a woman, aged forty-nine, whose right breast together with the pectoral fascia and axillary glands had been removed four years before for cancer. Recurrent nodules were excised the same year. Three years ago the cancer recurred and ulcerated, and continued in that condition. Nine months ago both ovaries were removed, and the patient was put on thyroid extract, 5 grains, three times a day. In eight months the ulcer had entirely healed, and a scirrhus nodule in the left breast, three inches across, and the enlarged left axillary glands had entirely disappeared. There remained some keloid-like nodules in the cicatrix of the ulcer. This is the second apparent cure of cancer by oophorectomy and thyroid extract which Herman has reported. He considered the combined treatment better than either part of it if carried out alone.

BOYD mentioned a case in which thyroid extract was given for twelve months, the tumor remaining stationary. The patient then disappeared from observation. Six months later she presented herself, the tumor in the meantime having wholly disappeared. Gould published a case in which nodules in the femur and elsewhere, recurrent after removal of cancer of the breast, had entirely disappeared without any treatment. It is to be noted that all of these cases were in patients at about the menopause.

At the Clinical Society, April 14th, WEST read a paper on skin affections in renal disease. Rashes associated with edema are for the most part erythematous in character, transitory in duration, produce few symptoms, and unless general, have but little clinical importance. Rashes without edema occur almost exclusively in the course of "granular kidney." They are generally widespread, and often universal, of great obstinacy, and of grave significance, taking the form of erythema, pityriasis rubra, dermatitis exfoliativa, general eczema, and lichen. They are rarely hemorrhagic. West remarked that the rashes occur only late in the disease, and when the signs of granular kidney are well-marked, though not infrequently overlooked. The association of a generalized skin eruption, with albuminuria, is of great importance, and if the cause of the albuminuria is granular kidney, it is of the gravest significance, for the patient will soon die—not of the skin affection but of the granular kidney.

At the Society of Anesthetists, March 17th, GRANVILLE spoke of the death of a boy, aged seventeen years, to whom gas and oxygen were administered for twenty minutes. The supply being exhausted chloroform was given with great care. After four or five minutes the

pulse became weakened, and the chloroform was at once withdrawn. The pulse quickly failed, but the breathing continued deep and regular for five minutes, and then the patient died in spite of every restorative effort. He thought that chloroform should not be given after gas and oxygen, the effect of which is undoubtedly to dilate the heart.

SILK'S experience went to show that the after effects of gas and oxygen are more frequent and varied than those which follow gas alone. They may persist after the individual has regained consciousness. The mixture was not one to advise for indiscriminate use.

CROUCH said that he had experimentally proved that gas and air, or gas and oxygen, dilate the heart.

BUXTON said that the mixture had been praised as a panacea by some who were unaware of its limitations.

SOCIETY PROCEEDINGS.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, Held at the New York Academy of Medicine, May 9, 10, and 11, 1899.

FIRST DAY—MAY 9TH.

MORNING SESSION.

THE opening address by the President, DR. BEVERLY ROBINSON of New York, had for its subject

THE IDEAL PHYSICIAN—HIS CHARACTER AND ATTAINMENTS.

He said in part: Nowhere could this subject be more suitably spoken of than here in the New York Academy of Medicine, the walls of which are adorned with portraits of ideal physicians whose lofty character and superior attainments made them the leaders of men and of medicine in their day and generation. Unfortunately, as time goes on and the spirit of commercialism spreads, there is noticeable a degeneration from the high ideals of other days and money-getting becomes the great desideratum of certain professional men instead of that honorable position in public esteem with a modest competence and thorough feeling of self-respecting consciousness of duty fulfilled that was the aim of other days. The invasion of specialism has had much to do with this for the general practitioner was and is ever cast in a different mold and has other purposes. Only the few, very few, have been affected by this sordid spirit as yet, but it must be decried and if possible gotten rid of.

Physicians must cultivate a high personal ideal that shall affect their every action in life. While assuming none of the priestly character they must ever be found in the forefront of the battle for high public ethical standards. They must be leaders in reform, not alone in sanitary and hygienic matters, but in everything that concerns the public good, in politics, in public morals, in education. With the highest reverence for Nature's laws they must countenance no indecency and no crime perverse of natural order. Their education must include the heart as well as the mind.

As to their scientific attainments they must, of course, be of the highest possible order. Yet it must never be forgotten that the practice of medicine is an art, not a science, and due weight must be given to the results of their own experience. While keeping thoroughly abreast of modern advances in science the physician must not allow his practical judgment to be overruled by supposed scientific discoveries. In our own time, in the midst of the germ theory of disease, for instance, he must remember that great conservative medical authorities still hold out for the special liability of the organism to disease as the true cause of disease rather than specific germs.

The general practitioner, especially while not permitting the great special advances in medical science to escape him must be able to direct the specialists' work, not merely referring patients to the specialist because their treatment is not of his own range, but carefully providing that at no time a narrow view is taken of the patient's ailments. There will always remain for the family practitioner in the midst of the invasion of specialism an important rôle in this guidance of the work of the specialist, a rôle that will be of the greatest benefit to the patient himself and to the progress of practical medicine. While the high character and wide attainments this rôle demands may seem ideal, it is striving after this ideal that will keep the profession on the lofty plane it should occupy if it will be true to itself and its own great inherent purposes.

The first paper of the meeting, entitled
TREATMENT OF CONSUMPTION BY AIR AND LIGHT IN COLORADO,

was read by DR. CHARLES FOX GARDINER of Colorado Springs. He considers that air is the first requisite in the treatment of pulmonary tuberculosis. There are those who put nutrition in the first place, but herds of cattle well housed and well fed are often known to develop tuberculosis while the disease is rare among the ill-fed, neglected cattle wandering on the plains. The conditions requisite are mainly a dry thin air that encourages increased expansion of the lungs, for which altitude is an efficient factor, and that it shall be pure and free from dust. An important element in the cure of tuberculosis is light. For that the climate of Colorado is especially favorable since there is fifty per cent. more sunlight than at any city in the East. This has been experimentally demonstrated by photographic exposures. The collection of the experience of patients, even during the unfavorable weather of this last winter shows that there are very few days on which they cannot be out of doors between 10 A.M. and 4 P.M.

Ranch life in Colorado would seem to be ideal for tuberculous patients, but there are opportunities for exposure and overexertion, and the diet is often hard of digestion, so that ranching is only suitable for strong patients. Tent-life for young adults gives excellent results. The tent should have an opening at the top and should be raised a few inches above the tent-floor (there should always be a floor) so that a constant circulation of air is secured. Tents without such precautions can be, as any one who has lived in them knows, extremely stuffy

and unbearable. Such a tent may be habitable even in severe weather, and Dr. Gardiner has lived in one in a blizzard. Light and air are the important factors in all treatment of tuberculosis.

DR. PHILLIPS of Washington, D. C., said that he was glad that Dr. Gardiner called attention to the importance of light in the treatment of tuberculosis. To his mind this plays even a greater rôle than altitude in the success of Colorado for the disease. The rarefied air of altitudes requires more exertion of the lungs while a damaged organ usually gets better by rest. The subject of the influence of light deserves careful investigation.

In answer to a question Dr. Gardiner said that patients could get at least five and one-half hours of piazza life every day between 10 A.M. and 4 P.M., but it was not always easy to secure control over them to make them take this much out-door life.

DR. W. D. ROBINSON of Philadelphia said that any climate brought improvement for tuberculosis if the air was reasonably good and patients took proper care of themselves. In the early days when Chicago was a frontier town consumptives were sent there as to a health resort and were benefited.

DR. N. S. DAVIS, JR., of Chicago said that while he would not wish to underestimate the value of climate, still in the treatment of tuberculosis, nutrition was the other important element in treatment, and the two things must go hand in hand to bring success.

DR. SHERMAN G. BONNEY of Denver, Col., read a paper, entitled

SUGGESTIONS CONCERNING EARLY DIAGNOSIS IN PULMONARY TUBERCULOSIS.

Dr. Bonney said that it was clear that thousands of lives were sacrificed every year because of late diagnosis of tuberculous invasion. The earlier the diagnosis the better chance for cure, and it was in early cases that cures were lasting. In Colorado the doctor sees advanced rather than incipient cases. It would seem well to review the means of early diagnosis. The bacillus will sometimes not be found in the sputum until there is destruction of tissue, and at times even secondary infection. After physical signs are marked sometimes the bacillus cannot be demonstrated. The Röntgen-rays would form a valuable aid to early diagnosis, but they are of course out of the question for the general practitioner to whom most cases of tuberculosis come for treatment. The hope that a pretubercular stage could be recognized from the blood has proved illusory so that the old physical signs retain practically all their significance. The lesson they teach is not, however, realized soon enough or not acted on.

Solly has shown that two years pass after infection before patients go to Colorado. In my own experience it has been almost as long. There was in my cases an average loss of nineteen pounds, and a good proportion of cases with distinct phthisical heredity, or who developed their symptoms subsequent to influenza. These circumstances were of enough significance to have suggested very careful examination at least. A number of patients had had hemorrhages so that delay in diagnosis

seems inexcusable. No one physical sign is pathognomonic, but certain groupings of signs are very significant, and a history of such incidents in the patient's life as idiopathic pleurisy, even slight pulmonary hemorrhage, slow recovery from pneumonia, persistent cough, even though without expectoration, should arouse grave suspicion. The absence of febrile movements is not convincing as to the non-existence of phthisis; their presence is almost pathognomonic.

As a rule, full examination seem not to be made until a provisional diagnosis of tuberculosis has been reached. Even then the bases of the lungs and the interscapular spaces are not given the attention they deserve. Even variations of the respiratory murmur, when connected with other suspicious signs in the absence of adventitious sounds are significant. The doctor should realize that on early diagnosis probably depends the life of the patient, certainly his physical welfare for years.

DR. E. O. OTIS of Boston read a paper, entitled

NOTES ON THE TUBERCULIN TEST.

He considers that there is an unreasonable prejudice against the use of tuberculin for diagnostic purposes because of the bad results that followed its use in the early days. In small doses—5 to 10 milligrams, never over 20—he thinks it without danger. It is an excellent diagnostic measure, and much more generally applicable than the Röntgen-rays. It is simple, and gives definite results. He has used it now in 111 cervical adenitis cases. Practically all of them were in dispensary service, ambulatory cases, and he is convinced that even under these conditions it is a useful agent, and to be relied on.

He has used both Koch's and the Adirondack tuberculin, but prefers to use one for the sake of uniformity. Usually 5 to 10 milligrams have been sufficient, and he never goes above 20. Different tuberculins are of different strengths, and this has led to some difference of opinion as to the dosage. As a rule the results obtained have been absolutely reliable. Certain syphilitic cases gave a reaction in the absence of tuberculosis, and advanced cases gave a local rather than a general reaction, and in general the constitutional reaction from these small injections is in inverse ration to the extent of the tuberculous process present. Bearing these guiding principles in mind, the significance of the reaction can be depended on. The fact that a reaction occurs in syphilis is not a great source of error in this country as syphilis is not very common, and the history of it can be elicited.

DR. VINCENT BOWDITCH of Boston read a paper, entitled

SUBSEQUENT HISTORIES OF ARRESTED CASES OF PHTHISIS TREATED AT THE SHARON SANATORIUM (NEAR BOSTON, MASS.).

The sanatorium has none of the climatic advantages usually considered so helpful in the treatment of tuberculosis. It is not on high ground. It is near a large city and near the sea, and in a climate not much different from that of Boston itself. It is on good, dry, gravelly soil. The success of treatment at it shows that an in-

stitution near home on dry soil, protected from inclement weather by woods and hills, may give excellent results. Of 36 patients discharged as arrested cases, 6 have since died, usually from other causes than tuberculosis, 24 are pursuing their ordinary avocations; of the remainder some have not been heard from; some have had relapses. All of the patients had lost weight or had other signs, but in only 12 were bacilli discovered. Altogether the results speak highly for sanatorium treatment of tuberculosis, so that it is interesting to note that Massachusetts has established a State sanatorium, the first State to do so, and New York is about to follow suit.

As a rule, an effort was made when the patient was discharged not to have him or her go back to the conditions under which the phthisis originally developed. Dr. Bowditch does not believe much in drugs, but in careful nutrition, judicious exercise, and air.

DR. STUBBERT said that bacilli could at certain times not be found in the sputum of tuberculous patients, so that with other physical signs Dr. Bowditch was perfectly justified in treating the cases as consumptives. Dr. Stubbert thinks that the treatment of complications and the relief of symptoms constitutes an important auxiliary element in the treatment of consumption.

DR. F. H. WILLIAMS has seen tuberculous patients improve a great deal even after admission to the wards of a general hospital because of the regular quiet life and the better nutrition.

DR. BOWDITCH considers this improvement only temporary, and that it occurs especially in cases in which the nutrition was poor before.

DR. FRANCIS H. WILLIAMS of Boston read a paper, entitled

ROENTGEN-RAY EXAMINATIONS IN INCIPIENT PULMONARY TUBERCULOSIS.

After 165 examinations made with the X-rays and the thoracic screen Dr. Williams saw their value for diagnostic purposes. The shading of the apices and the lessened excursion of the diaphragm are only rivaled by the discovery of the bacilli in the sputum or the tuberculin test. The patients examined can be divided into two groups, first, those who had physical signs but no râles, and second, those who had no physical signs. In the first group Dr. Williams has reported three cases before; he now has seven more. In the second group examinations of the thorax were made usually for heart trouble and the shading at the apices being found the tuberculin test was used to confirm the diagnosis.

In two rheumatic cases absolutely without physical signs the apical shading was distinct and the tuberculin test proved positive. Dr. Williams has often been struck by the frequent association of tuberculosis and rheumatism. Experiment, post-mortem, has shown that consolidated lung is ten times more resistant to the passage of the X-rays than normal lung. Hence nodules of consolidation in the midst of healthy tissue may be discovered and even an increased congestion of the organ produces its effect upon the thoracic screen.

The X-rays alone will not make the diagnosis, but taken with the physical signs they assure. On the other

hand, where suspicious physical signs without râles are present they may clear up the case and make the prognosis better.

In emphysema they are especially useful, for while the pathologically inflated lung tissue offers an almost insuperable objection to getting the physical signs of a tuberculous process in such lungs it makes no difference to the X-rays how much air or air-containing tissue there may be. The diagnosis once made may be confirmed by finding the bacilli or by the tuberculin test.

The thoracic screen is very much superior to the X-ray photographs for these cases. Dr. Williams exhibited X-ray photographs showing how certain shady areas had been missed in some cases, and showing how different appearances were according to the printing of the photographs.

DR. STUBBERT said he had watched the development of the use of the X-rays for diagnosis in tuberculosis with a great deal of interest. It had now become a valuable diagnostic aid. In his experience the thoracic screen was far ahead of the X-ray photographs in the amount and definiteness of the information they conveyed.

AFTERNOON SESSION.

The first paper was read by DR. B. P. ANDERSON of Colorado Springs, and was entitled

INTERMEDIATE ALTITUDE FOR THE CONSUMPTIVE.

The fact that high altitudes are of benefit to consumptives has turned the Colorado desert into a crowded paradise. But not all consumptives do equally well at high altitudes and some are not able to stand at all the rarefied air of Colorado. There is a feeling of discomfort that develops almost at once and that does not wear off with time. It disturbs rest and nutrition and finally makes it clear that this elevation is unsuitable for the patients. For such cases an intermediate altitude often does good. They feel better at once at an elevation of 3500 to 3800 feet, and improvement continues.

During the winter months they may be sent to places of about this altitude in New Mexico. New Mexico is, however, too hot in the summer-time. Often after a few months' sojourn in an intermediate altitude these patients may return to Colorado without experiencing the former discomfort and continue their residence there with continued improvement.

In discussion DR. LEONARD WEBER of New York City said that in hemorrhagic cases especially there is danger in sending patients to a high altitude. In advanced disease with the normal respiratory power already decreased by the extensively diseased lungs, the call for over-exertion on the part of already crippled organs was liable to cause serious harm. As a matter of fact, it was not the altitude that was the important therapeutic element, but the pure, dry air and that may be obtained without the ascent.

DR. SOLLY of Colorado Springs said that all cases with continuously high pulse or continuous fever, many hemorrhagic and advanced cases, and all those that cannot take regular exercise do not stand high altitudes well; some cannot bear them at all. All the physicians in Col-

orado recognize that such cases do better in certain parts of Arizona and New Mexico. The Las Cruces Valley and certain places near Tucson, Arizona, seem especially favorable as far as regards meteorological conditions. The accommodations for patients are very poor, however, long stage rides have to be taken, the food is often coarse and unsuitable, the life indoors not agreeable. The Climatological Association would accomplish a great good, work, if, by calling attention to the needs in this direction they could get the proper people to provide the accommodations.

DR. NEWTON of Trenton, N. J., said that this question of food is important, for nutrition is the key-note of the struggle with tuberculosis. So long as people digest well there is hope, but people with poor digestion do not get well.

DR. CHARLES F. MCGAHAN of Aiken, S. C., read a paper, entitled

WHY FUMIGATION OF APARTMENTS OCCUPIED BY TUBERCULOUS PATIENTS AT HEALTH RESORTS SHOULD BE UNDER MUNICIPAL CONTROL.

There is real danger for patients at health resorts unless the most careful disinfection is enforced. It may be that a patient with incipient tuberculosis will succeed to the room of an advanced case of tuberculosis, the walls, floor, and furniture of which are perhaps reeking with tubercle bacilli. It is important in such a case that the medical attendant shall be assured that the room and everything in it has been thoroughly disinfected. Owners often do not believe in the contagiousness of tuberculosis, and so are careless in cleansing or they do not know how to disinfect properly and make it scarcely more than a perfunctory cleaning. Every room in houses devoted to the receiving of tuberculous patients should be examined by some local Board of Health, and certificates granted only for those known to be in good condition. Besides this, the ordinances as to spitting in cars and on sidewalks, etc., should be rigidly enforced in these towns, and the washing regulated so that handkerchiefs and other clothing shall not be washed together. Patients should be required to use pieces of cheese-cloth to expectorate into, which should be burned afterward, not sent to the laundry.

DR. E. O. OTIS of Boston considered Dr. McGahan's suggestions as very practical and important. The method of certification so as to secure the object intended, effective disinfection and not perfunctory work, will require careful consideration. At Cannes where there seems to be a good system in operation when a patient who has been under the care of a physician either dies or leaves a room the physician sends a card to the proprietor of the house who must send it to the Bureau of Hygiene. The bureau, after having disinfected the room or apartment, returns the card stamped to that effect to the physician. All hotels and houses that wish to keep lodgers are registered with the mayor, and as the records of disinfection are kept a physician may easily learn the condition of any of them.

DR. GARDINER of Colorado Springs thought that the danger of infection is less at an altitude. Though in

years gone by disinfection was imperfect in some of the older hotels no bad results seemed to follow either for patients or their attendants. He collected last year dust from one of the oldest of the Colorado Springs Hotels, since burned down. Yet when injected into susceptible animals it did not produce tuberculosis. Infection in human beings does not seem to follow so much from dust inhalation as from recrudescence of old tuberculous processes. Fifty per cent. of people have tuberculous foci somewhere in them which light up when they run down in health, or when placed in unfavorable hygienic circumstances that lower their resistive vitality.

DR. HINSDALE said that the American Climatological Association should draw up a set of regulations setting forth how rooms that have been occupied by tuberculous patients at health resorts should be disinfected. This would supply a standard by which those interested in keeping lodgers should direct their efforts at disinfection. When left entirely to themselves their work is necessarily more or less perfunctory.

DR. MCGAHAN, in closing the discussion, said that the methods at present employed are often worse than perfunctory. Very little that is really effectively disinfecting is done, yet from the fact that something has been done a false sense of security is developed. Perhaps after a careless sealing or no sealing at all of doors and windows a sulphur candle is burned in a room, the doors and windows are left open till the sulphur fumes escape, then the furniture, the woodwork of which has been brushed off with an antiseptic solution, while the upholstered parts have been perhaps left severely alone, is returned to the room and it is considered to have been disinfected. Some reliable system of disinfection, the employment of which should be enforced by rigorous inspection on the part of some constituted authority should be adopted. Only this will keep ignorant landlords, or those to whom money is the all important consideration, from neglecting their duty toward their guests in this matter.

DR. J. B. WALKER of Philadelphia read a paper, entitled

SOME REMARKS ON CLIMATE IN RELATION TO RENAL DISEASE.

which will appear in a subsequent issue of the MEDICAL NEWS.

DR. THOMAS D. COLEMAN of Augusta, Ga., agreed with Dr. Walker as to the influence of climatic conditions, and especially temperature and humidity, upon renal disease, for kidney trouble is rare at the South and occurs certainly much more infrequently than at the North.

DR. JUDSON DALAND of Philadelphia thought that the influence of climate may be exaggerated and that the difference in diet, in temperaturate, and warm countries, just as between winter and summer, must have a great deal of influence. Especially does the greater quantity of water consumed in hot weather and in warm climates serve to flush out the kidneys and relieve them of the irritation of excreting concentrated toxic materials.

DR. W. F. R. PHILLIPS of the Weather Bureau at Washington, D. C., said that in steadily warm or cold climates the diurnal range of temperature is not great and

patients can clothe themselves more suitably and so are not subject to the effects of sudden changes of temperature. It is these sudden changes of temperature, often interfering with the function of the skin, that especially act unfavorably on the kidneys and are the etiological factors of more frequent renal disease in temperate climates.

DR. SAMUEL A. FISK of Denver, Col., said that at the stockyards in Chicago Western steers could be recognized by the perfect kidneys they usually possessed. The climatic conditions in the West were good, not alone for the lungs, a fact that was well known, but for the kidneys too, and account should be taken of this in recommending a climate to patients. Very seldom did the physician see acute Bright's disease in the West.

DR. L. D. BULKLEY of New York City said that his personal experience with renal trouble was of interest. When young he had found albuminuria and resolved to live in a mild equable climate. He had begun to pack his trunk for Brazil, when circumstances had detained him, and he has been enabled by judicious care of himself to remain here in comparative health. He had succeeded especially in limiting the amount of albuminoid material he would have to take in other forms by drinking milk on an empty stomach in large quantities, when he believes it is directly absorbed and does not lead to the production of irritative excrementitious substances. He has had several acute exacerbations of his kidney trouble, the severest some years ago, while in the Yellowstone Park, and certainly not from exposure to dampness there.

DR. N. S. DAVIS, JR., of Chicago said that he had recently seen the statistics of deaths in various parts of the country from renal disease in some insurance statistics that he was looking up for another purpose. As they threw light on the question of the geographical distribution of renal disease he would quote from them. According to those statistics the fewest deaths from renal disease among the insured occurred in the Northern States of the Mississippi Valley, the most on the Pacific Coast, and after them in the Eastern States. The South was not especially favored in the absence of kidney troubles according to this.

The next paper, by DR. L. B. BULKLEY of New York, was entitled

CLIMATE AS IT AFFECTS THE SKIN AND ITS DISEASES.

By climate is to be understood not alone meteorological conditions, but in general the manner of life under these conditions. A good deal of the influence upon the organism usually attributed to climate is effected through the skin, though this fact has not been paid sufficient attention to hitherto, and the present paper is probably the first, for there seem to be no others on the subject in the literature in which the effect of climate upon the skin has been carefully studied.

Climatic influence on the skin may be judged first from the production of disease of the skin. Leprosy seems to require certain climatic conditions for its existence that are not fully understood. It is not especially favored by cold or heat nor by dampness or dryness. It does

spread in Hawaii and in Iceland. It failed to spread in the United States, though introduced into Minnesota. Not a single case of acquired leprosy has occurred in New York, though lepers have been almost constantly in the city.

In syphilis temperature has an influence on the lesions that occur. In hot countries especially, the skin is affected and deep ulcerations occur. In cold countries lesions of the bones and internal organs especially are noted.

Eczema is much more common in our changeable climate than in warm or cold but more equable countries. It is aggravated in cold, damp weather. It is often better at high altitudes or when patients go South. It is usually aggravated by the damp air near the Great Lakes.

Psoriasis is not near so common in the tropics. Acne is usually worse at the seashore, and boils occur more frequently. Parasite diseases of the skin are worse near the sea coast than in the interior. It is evident that this question of the influence of climate on skin diseases is an important one that deserves careful study.

DR. L. D. JUDD of Philadelphia read a paper, entitled

THE HYGIENICS OF THE SKIN.

Dr. Judd considers the skin the most abused organ in the human economy except perhaps the stomach. It is subject to abuse from unseasonable bathing, the use of improper, irritating soap, rubbing with rough, harsh brushes or towels, and by the constant irritation of improper underclothing. Besides, the same people consider it necessary to subject it to a sort of periodical purging by the frequent use of Russian or Turkish baths. He would plead for a warm bath in the morning followed by a cold douche and gentle rubbing with a soft towel.

As to the kind of underclothing the question is most important. The use and prejudice in favor of woolens has become almost a fetish worship. Dr. Judd himself, after several years of personal experience, and noting the results in his own family and practice considers linen-mesh underclothing the only proper kind. It should not be fine but closely woven and should be worn all the year around. Woolen underclothing, despite the prejudice in its favor predisposes to colds. Linen protects from colds, and Dr. Judd himself and his family and patients have been less troubled with recurring colds since they took to wearing linen-mesh next the skin.

DR. BULKLEY said that his personal experience had been exactly the opposite to that of Dr. Judd. After trying the linen-mesh he had given it up and he now used the same weight of woolens summer and winter. They seemed to keep the heat out in summer as well as they kept it in in winter and he does not feel more uncomfortable than people around him in the warm weather. He believes that many people bathe too much. Years ago Hebra at Vienna called attention to the fact that certain skin diseases were aggravated by bathing and that in places around Vienna where bathing was more common, skin diseases were more frequent. In general the profession had laughed at Hebra, considering his opinion the expression of a man with whom his bath was

not a favorite, but gradually we have come around to think there is more in it than we used to think. Dr. Bulkley is not so much of an advocate of bathing as he used to be and is accustomed to tell patients jokingly that animals in water have scales and that those who are much in water may develop scales. Certainly injudicious, too frequent bathing causes congestion of the liver and other internal organs and causes other alterations of circulation not compensated for by its stimulant or sedative effects.

DR. IRWIN H. HANCE of Lakewood, N. J., read a paper, entitled

HYDROTHERAPY IN THE TREATMENT OF INSOMNIA.

He has had excellent results in the treatment of very obstinate cases of insomnia with a combination of warm bathing and static electrization. The improved cutaneous circulation after the baths led to better general circulation and toned up the nervous system. Of course where local causes exist they will have to be combated by drugs, and the diet and exercise will have to be carefully regulated. There should be gentle exercise every day but never to over-exertion. Static electricity, the patient being positively electrized and the other pole grounded seems to add in Dr. Hance's experience to the alterative effect of the hydrotherapeutic measures and aids in establishing that nervous balance on which refreshing sleep in normal amount depends.

SECOND DAY—MAY 10TH.

DR. W. D. ROBINSON of Philadelphia read a paper, entitled

THE CLIMATOLOGY OF NUDITY.

After discussing the modern theories of light, and especially the ethereal wave theory, and the fact that light, heat, and electricity are only differing modifications of waves in the ether, Dr. Robinson suggested the possibilities there are for chemical action and reaction when light is permitted to impinge unhindered upon the skin. Probably many effects now attributed to other causes are really due to the action of light in this way. For instance, it is worth while recalling that the lesions of the ordinary contagious diseases are on the skin, and this may represent the result of Nature's effort to get the virus of the disease to the surface where it would be acted upon by light. We know very little of the therapeutics of light, but it is not impossible that such qualities as the well-known fluorescent power of quinin in solution may be found to be closely connected with its therapeutic power.

DR. S. E. SOLLY of Colorado Springs read a paper, entitled

RECENT INQUIRIES CONCERNING THE BLOOD CHANGES INDUCED BY ALTITUDE.

All who discuss the subject admit that there is a real or apparent increase in the number of red blood-cells within a day after ascension to an altitude. This is followed by a gradual increase in hemoglobin and specific gravity of the blood. There is a corresponding decrease on coming down to ordinary altitudes but this is followed by another increase that persists. The most recent work

on the subject has been a series of experimental observations upon animals in bell-jars. The blood was counted with a Thoma-Zeiss instrument, hemoglobin estimated with Fleischl's apparatus, and in certain cases the blood for examinations was taken from the aorta and liver. As the relative humidity was high and the temperature in the bell jars was normal there could be no question of inspissation of the blood.

These observers found from twenty to fifty per cent. increase in the number of red cells as the pressure increased. They continued their observations of the animals used in the experiments for ten months after. They found a decrease in the number shortly after the animals were removed from under pressure, but reaction set in, the number again increased and persisted as long as the animals were kept under observation. This is confirmed by certain clinical experiences with anemic school children who were sent to the mountains and had a persistent increase of their red cells even after their return.

The Finnish observers also noted an increase in the average size of the red cells because of decrease of microcytes, and this decreased after a return of the animals to normal conditions. The nucleated red corpuscles were slightly increased in number, showing that there was an effort at blood making. A number of mitotic figures were seen also indicating the same thing. The number of red cells was the same in blood taken from the periphery, and from the aorta and liver, in two animals, so that it would not seem to be any special distribution of blood with more red cells at the periphery than usual. When the number of corpuscles returned to the normal many shadow corpuscles were seen, which would seem to indicate an increased destruction of red cells.

There would seem to be good grounds for believing then that the increase of red cells on ascending to an altitude is really not apparent. Our clinical observations in Colorado seem to confirm this, but as yet they are too few in number to materially contribute to the elucidation of the question. There are so many possible sources of error that the work must be done with extreme care. Great help would be afforded if physicians would carefully examine the blood of patients before they go to the higher altitude of Colorado. The subject is so important that the Climatological Association would be doing a good work if it appointed a special committee for the investigation of the question.

A paper on

ALTITUDE AND HEART DISEASE, WITH REPORT OF CASES

was read by DR. R. H. BABCOCK of Chicago. A synopsis of it is as follows: Report of nine cases of heart disease; a brief statement of the effect of altitude on blood-pressure; mountain sickness, according to Regnard, due to anoxiaemia; as regards heart disease, the effect of altitude explicable through acceleration of blood-flow; application of this simple theory to the nine cases reported; conclusions.

It will appear in a subsequent issue of the MEDICAL NEWS.

DR. ABRAHAM JACOBI of New York City read a paper, entitled

FUNCTIONAL CARDIAC MURMURS.

He said in brief that after watching the subject carefully in children in whom the problem has less disturbing elements than at adult age he is convinced that real functional heart murmurs, that is, murmurs due to faulty action of the valvular or muscular mechanism of the heart but without pathological change in the organ are much rarer than used to be thought. Changes in the myocardium of the heart are only now being given their proper value and with that is coming the realization that they may sometimes be the cause of murmurs.

In children we often do not know a cause for a heart lesion. A preceding rheumatic attack makes it very clear in an adult. Rheumatism is often missed in children, however, and we do not care to pronounce on the existence of a heart lesion. At the time when the child's heart is developing, however, the cavities are growing larger yet the muscle does not grow thicker. During this period murmurs are not rare and they would seem to be due to myocardial insufficiency at times which shows that this may give a murmur really due to an organic, not functional, defect.

DR. N. S. DAVIS, JR. of Chicago read a paper, entitled

PROGNOSIS IN CHRONIC VALVULAR AFFECTIONS OF THE HEART,

which will appear in a subsequent issue of the MEDICAL NEWS.

DR. H. L. ELSNER of Syracuse read a paper on the TREATMENT OF THE CARDIAC ASTHENIA OF PNEUMONIA.

As the toxins of pneumonia depress the heart from the beginning no cardiac depressants should ever be used. Needless to say, none of the coal-tar antipyretics should be employed. Nitroglycerin is contraindicated because this paralyzes the peripheral vasomotors and the toxemia of the disease is already accomplishing this purpose. In selected cases when the heart is laboring over-much, venesection should rather be done. Nothing could well be more ill-advised than the so-called bleeding of a patient into his own veins. The young men who are taught in pretty figurative language to use the concealed lancet of veratrum viride do great harm. Dr. Elsner has never seen a patient recover when this system of medication has been employed.

The next paper, read by **DR. ROLAND G. CURTIN** of Philadelphia, was entitled

ESOPHAGEAL GUSH AND CLICK AS A CAUSE OF A SIMULATED HEART MURMUR.

DR. JOHN C. MUNRO of Boston followed with a paper, entitled

EMPYEMA FROM A SURGICAL STANDPOINT.

Both of these papers will appear in subsequent issues of the MEDICAL NEWS.

DR. RICHARD C. NEWTON of Philadelphia read a paper on

TRAUMATIC RUPTURE OF THE HEART WALL WITHOUT PENETRATION OF THE CHEST WALL. WITH A CASE.

The case was one of rupture of the walls of the right ventricle in a young and vigorous young man, brought about by a bicycle accident. The handle-bar seems to have been driven forcibly against the chest, causing fracture of the sixth left costal cartilage. This produced the heart rupture which started from without, but there was no rupture of the pericardium. Post-mortem the heart was found perfectly healthy. In practically all the cases reported some pathological condition of the substance of the heart was found. Up to 1870 Gamgee collected reports of twenty-eight of such cases, and to these Newton now adds sixteen new ones. The patient reacted well to stimulants, and there is no doubt that could a diagnosis of the real condition have been made surgical intervention might have saved life, but collapse supervened and he died.

The next paper on the program was by **DR. A. C. GRETCHELL** of Worcester, Mass., and was entitled

BICYCLING IN RELATION TO HEART DISEASE.

It will appear in a subsequent issue of the MEDICAL NEWS.

DR. HOWARD S. ANDERS of Philadelphia read a paper on

THE RELATION OF LOCAL METEOROLOGICAL CONDITIONS TO THE INFLUENZA EPIDEMIC IN PHILADELPHIA IN THE WINTER OF 1898-99.

On *a priori* grounds there is no encouragement to take up the study since there is an almost universal impression now that weather influences have no effect on the spread of grip, or of other contagious diseases. It is interesting to note, however, that during the recent months, when influenza was spreading so rapidly in Philadelphia, the temperature was higher than during preceding years, and the barometer higher also. The mean daily range from which the mean daily variability can be deduced was also high. The month of January, 1899, in which grip was so prevalent, was especially notable for its inequableness.

DR. GUY HINSDALE of Philadelphia read a paper on

THE COLD WAVE OF FEBRUARY, 1899,

in which he described the meteorological conditions which preceded and accompanied this, one of the most striking weather disturbances ever known.

DR. HAROLD WILLIAMS of Boston read a paper, entitled

THE EFFECT OF PROLONGED AND VIOLENT MUSCULAR EXERTION UPON THE HEART.

Dr. Williams had the opportunity to examine a number of athletes shortly after they had completed a Marathon or cross-country race, up hill and down dale, for twenty-five miles. Most of them were extremely exhausted, some were very cyanotic, some ashen-colored, and some of them had to be carried to the examining-room. All of them had notably lost weight, one of them as much as six pounds.

On inspections in nine of the cases there was found

bulging left costal cartilages on percussion very carefully done by a number of physicians, and controlled by tracings and copies which each succeeding examiner did not see; there was found to be dilatation of the left ventricle. Contrary to the general impression there was lowered arterial tension. After a run of five miles the trained athlete is exhilarated and then arterial tension is high, but after twenty-five miles there is exhaustion and a fall in tension.

The temperature was found lowered in every case, in all a degree, in three cases two degrees, in one four degrees. This is contrary to what is usually stated in textbooks on physiology, which state that the temperature is higher after exercise on the theoretic principle that muscular work means increased heat production and consequently higher temperature. In all of the runners albuminuria occurred, in some associated with casts so that either casts have not the significance attributed to them of a lesion of the kidney, or such lesions occur as the result of severe physical exertion.

In eleven out of thirteen of the athletes there was a murmur to be heard in the second intercostal space the same in quality and pitch in all the cases though varying in intensity. In six of the cases this was transmitted to the apex and beyond it, and could be heard in the axillary region. In a word, it had all the qualities of a mitral regurgitant murmur. In the other five cases the murmur was not transmitted. It was concluded that this was a real mitral regurgitant murmur due to the fact that the papillary muscles and the myocardium were exhausted as well as the systemic muscles and so did not act coordinately. In answer to a question as to the duration of these murmurs, Dr. Williams said that some of them had disappeared after twenty-four hours, others after forty-eight hours. As to the effect on the athletes, many of them he knew engaged in other such races within a few weeks. One of them, despite a severe fall had made an excellent record in a race only a week later.

DR. THOMAS DARLINGTON, JR., of New York City read a paper on

A CASE OF ANEURISM WITH EROSION OF THE STERNUM, RUPTURE TWICE AND DEATH.

The patient gave a syphilitic history and had been wounded by a shoemakers' knife when young through the sternum. The etiology of the aneurism may thus have been syphilitic or it may have been traumatic.

The aneurism grew to be of enormous size, eroding the sternum in its whole width and making the tissues in front of it thinner and thinner. At two points especially the skin became adherent, reddened and eroded to dangerous thinness. Finally during a fit of coughing it ruptured. About a pint of blood was squirted out of it almost to the ceiling. Then the hemorrhage was stopped by the engagement in the opening of a clot that had been contained in the aneurism. A photograph exhibiting the condition was shown. A dressing with plenty of cotton was put over the opening. Three days later it ruptured a second time, this time at the other thinned spot and

with an immediately fatal result. No autopsy was permitted.

REVIEWS.

TRANSACTIONS OF THE AMERICAN ORTHOPEDIC ASSOCIATION. Vol. XI., 1898.

THIS official volume of the association is more voluminous than any heretofore published, and by virtue of its numerous excellent articles bears testimony to the fact that the same spirit which was so largely responsible in securing for American orthopedists the foremost position is still very active.

Keenly aware of the trend of the times the president in his address sounds the key-note of warning that the pathological and bacteriological laboratory with its staff of workers are now as much a *sine qua non* for maintaining the supremacy as the machine-shop and its mechanics had long been conceded to be. The subject most frequently presented is the forcible correction of the deformities following Pott's disease. To give just consideration to the vast fund of information conveyed by the forty-five articles contributed, the space allotted to the reviewer does not permit. In lieu of this we can best say that this volume is little short of an excellent text-book on orthopedics.

RAILWAY SURGERY. By CLINTON B. HERRICK, M.D., Lecturer on Clinical Surgery, Albany Medical College; Surgeon to the Delaware and Hudson and the Fitchburg Railways, etc. New York: William Wood & Co., 1899.

TO satisfy the call for a work pertaining to railway injuries the author has submitted the conclusions of his extensive experience in this brochure. We believe it to be the pioneer work of its kind, though collected writings of the Association of Railway Surgeons are extant.

The *raison d'être* for this treatise the author sees in the extraordinary forces which produce this class of injuries, but which, for our part, differ in degree only from those encountered by any surgeon in civil practice, yet the author is in the position to speak ex cathedra on this subject. The chapter on amputations, as might be anticipated, is most elaborately dealt with. Referring to amputation at the hip-joint we venture to say that the author's estimate of the high mortality would be greatly lowered by resorting to Wyeth's excellent method of hemostasis. The narrative of the other injuries is barely short of a summary, so terse is the account; yet throughout the work the author evinces a thorough appreciation and understanding of asepsis and antisepsis.

To us the term railway surgery also calls to mind the organization effected to meet the demands of treatment of a large number of injured, in which respect it is akin to military surgery, and on which score the author leaves us poorly informed; again the medico-legal aspects are very important and these receive a fair exposition in the later pages. Finally, one cannot help believing that this work might arouse greater interest if many more of the author's actual experiences had been incorporated in its pages.